MARCH 17, 1997 VOLUME 19, ISSUE 11 *Founded in 1978*

INFO WORLD

The Voice of Client/Server in the Enterprise

I want my CORBA TV! *Taking an open-systems approach to the challenge of verifying wireless TV subscribers.* 74



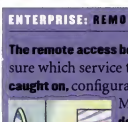
Internet Explorer 4.0: *The next interface wave for the Web is still a work in progress.* 93



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ENTERPRISE: REMOTE POSSIBILITIES

The remote access boom has begun, but no one's sure which service to use. Although **ISDN has caught on,** configuration remains a nightmare.



Meanwhile, **ADSL could be delayed by regulatory roadblocks** or slow response from the telcos. **Cable modems are super fast** but prone to congestion, and **standards-free 56Kbps modems are great** — when you're sending data downstream to a compatible system. **We bring you up to date on remote access options.** *See page 67.*

Trio forms cluster group

■ Intel, Microsoft, Compaq agree on PC clustering standard

By Judy DeMocker

INTEL, MICROSOFT, and Compaq are readying a standard interconnect for clustering Intel servers that should speed the development of distributed system architectures based on commodity processors.

Set to be launched this spring, the initiative calls for Intel, Microsoft, and Compaq to work with 40 other vendors to define the Via specification, which will allow software platform vendors to support clusters by adding a single set of drivers to their operating systems.

However, other vendors, such as Sun Microsystems, are not giving this coalition any breathing room. Sun announced last week its Full Moon software and APIs for the creation of applications for Solaris clusters. The company later this year will roll out support for two-, four-, and eight-node high-availability clusters, with functionality coming in 1998 to create a cluster-wide file system, global device access, and global networking.

In 1999, Sun will offer disaster-

▹ **CLUSTERING** *page 26*

Java in, OpenDoc out

■ IBM shifts emphasis to Java Beans

By Ed Scannell and Tom Quinlan

IBM AND SUN Microsystems have decided to standardize on Java Beans rather than OpenDoc as their enterprisewide object model.

The move to Java Beans was a natural outgrowth of IBM's increasing focus on network-centric computing at the enterprise level, said Scott Hebner, manager of application development and marketing for IBM's software group. He said IBM will announce the strategy on April 2, the opening of Sun's JavaOne trade show in San Francisco.

"OpenDoc was optimized for being an OS-specific type environment," Hebner said. "In line with our focus on network computing, our component architecture is going to be Java Beans, and that is where we are heading with all this."

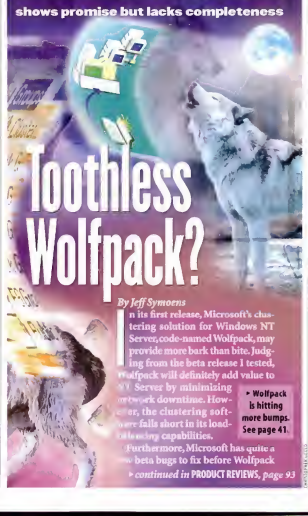
As part of that initiative, IBM and Sun will propose that the Object Management Group (OMG) use Java Beans instead of OpenDoc as its object-container model.

OpenDoc's future, at least at IBM, will be as a source for adding object-container technology to a number of products, such as VisualAge for C++ and other tools, Hebner said.

According to sources familiar with the talks between the two

▹ **JAVA BEANS** *page 26*

REVIEWS Microsoft's NT clustering beta shows promise but lacks completeness



Toothless Wolfpack?

By Jeff Symoens

In its first release, Microsoft's clustering solution for Windows NT Server, code-named Wolfpack, may provide more bark than bite. Judging from the beta release I tested, Wolfpack will definitely add value to NT Server by minimizing network downtime. However, the clustering software falls short in its load-balancing capabilities.

Furthermore, Microsoft has quite a few beta bugs to fix before Wolfpack

▹ *continued in* **PRODUCT REVIEWS,** *page 93*

▹ **Wolfpack is hitting more bumps. See page 41.**

NetPC specification

Microsoft launches NC counterstrike

By Bob Trott and Andy Santoni

TWO WEAPONS IN Microsoft's counterattack against the network computer were launched last week when the software giant announced a cost-cutting kit for Windows NT and released, with Intel, additional product details for the thin-client initiative called the NetPC, which the companies launched last year.

Microsoft will make available in the second quarter a Zero Administration for Windows kit aimed at tiding users over until Windows NT 5.0 — expected to fully embrace the Zero Administration Initiative — is available, probably not until 1998.

"This is a small amount [of Zero Admin] but a critical amount," said Phil Holden, product manager at Microsoft's personal business systems division.

The kit will allow IS managers to

▹ **MICROSOFT** *page 26*

▹ **For more on Microsoft's plans for a kinder, gentler Windows, see related article on page 19.**



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"You've got a friend in the business."

Financial update

Apple cuts back, plans next step

By Ed Scannell and Tom Quinlan

NEXT COMPLETED its "stealth acquisition" of Apple Computer last week when Apple formally adopted a survival strategy that leans heavily on the products and strategies developed by Next when it was a separate company.

Although the Macintosh computer and OS are still Apple's primary products for the moment, a number of Apple-developed technologies considered core just a month ago are now in essence gone. The dropped technologies include OpenDoc, AIX, QuickDraw GX, and Apple's videoconferencing technology. Instead, Rhapsody and Java are in the driver's seat now.

Also going are 2,700 full-time and approximately 1,400 contract employees. The company is cutting costs in an effort to end a string of dismal financial quarters.

The company is expected to post a loss of between $800 million and $1 billion for its current quarter, which ends this month.

The loss will include write-offs for costs associated with the layoffs, Apple's $400 million acquisition of Next, and an estimated $100 million operating loss.

Apple, which in fiscal 1995 was just shy of $12 billion in total revenues, wants to get its break-even point down to less than $8 billion.

Although Apple won't immediately drop out of any of the markets it is currently in, the company will significantly cut the number of consumer models it offers, with the Performa name going away.

Apple also indicated that although it would continue to market the MessagePad line for now, it is considering either selling the Newton division or fully licensing the technology to third parties.

More important over the long term, however, is the direction that Apple intends to take with its technology, which now has a decidedly Next bent.

OpenDoc and Cyberdog will no longer be upgraded, the number of future MacOS upgrades has been reduced, and Apple will stop upgrading its development tools for the MacOS.

Instead, Apple will focus on developing Rhapsody, its NextStep-based OS, and the company will place even more emphasis on Java, including a Java API set originally developed by Next for NextStep and OpenStep.

Although the company did not address its plans for Windows NT, some Apple executives expect the Microsoft OS to play a larger role in the company's future plans.

The moves reflect not only the considerable influence wielded by part-time consultant Steve Jobs but also Apple's dismal track record in the 1990s of actually delivering promised products.

Most of Apple's major initiatives of the past few years — including the five-point alliance with IBM; Taligent; the Copland and Gershwin OSes; clone licensing; and the Newton — either have been scrapped before products hit the market or have fallen far short of expectations.

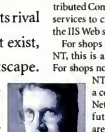
Overall, the moves are designed to give Apple a solid business model, said President and CEO Gil Amelio. They are aimed at streamlining the company's bureaucracy, more tightly integrating the company's marketing efforts, and focusing research and development on Apple's core markets.

FROM THE NEWS DESK · MICHAEL VIZARD

Real high-tech aces don't shoot blanks

Pre-emptive vapor strikes, the process by which one vendor tries to slow the momentum of its rival by pre-announcing products that don't yet exist, have reached new heights thanks to Netscape.

Realizing that both Microsoft and IBM are significantly ahead with integrating the transaction tools needed to build and deploy extranets, Netscape last week floated a white paper detailing a next-generation Web server due next year that will sport transaction tools and an integrated object store.



As noted in the Page 6 article by Amy Doan and Lynda Radosevich, these technologies are crucial for building extranets, those semi-private intranets that span multiple business partners.

But in the dogfight for control of the extranet technology market, Microsoft and IBM already have their fighter planes in the air. Netscape, in contrast, is still back in the hanger trying to figure out what to do.

For example, IBM has working demonstrations of its MQ Series software working in concert with Domino Web servers from Lotus to build extranets. On top of this, the company will add industry standard distributed Web server technology using Womplex and will introduce highly sophisticated transaction tools from Transarc.

Microsoft, meanwhile, is delivering the first implementation of its Transaction Server for Windows NT, which uses proprietary Distributed Component Object Model services to create a tight link with the IIS Web server bundled in NT.

For shops that are committed to NT, this is a compelling offering. For shops not committed solely to NT, the work from IBM is a compelling alternative. Netscape white papers on future promises in an area where they have no expertise is not compelling, regardless of how many industry standards the company pledges allegiance to while drawing it up.

So did Netscape really do a service for customers, or did it just highlight its own inadequacies in terms of competing with IBM and Microsoft? Write to me at michael_vizard@infoworld.com.

AT DEADLINE

NT 5.0 PICKS UP 64-BIT VERY LARGE MEMORY

Microsoft plans to deliver a beta version of Windows NT 5.0 with 64-bit Very Large Memory support for Digital's Alpha platform this year. Digital has emphasized NT during the past several years, pushing the platform as integral to its overall PC and server strategy. However, NT hasn't been able to take full advantage of the 64-bit capabilities of the Alpha chip, and it requires Digital's FX32 emulation software to run existing Windows applications. Digital officials tout the forthcoming 64-bit version of NT for Alpha as ideal for users who require efficient access to Very Large Databases and deal in high-volume transactions or query-based applications.

HAYES TO BUY CARDINAL TECHNOLOGIES

Hayes this week will disclose plans to acquire fellow modem maker Cardinal Technologies. Cardinal claims a 10 percent share of the retail market for desktop modems, and Hayes has 11 percent, according to Hayes officials. Cardinal supports the x2 56Kbps modem standard developed by U.S. Robotics, but a standards battle has pitched x2 against other 56Kbps standards. Many modem companies, including Hayes, support the rival K56flex technology.

SQL SERVER PICKS UP DATABASE SUPPORT

Microsoft plans to add multiterabyte database support to SQL Server later this year and will demonstrate the product this spring, according to Microsoft officials. Microsoft intends to make SQL Server more suitable for data warehousing, adding other features such as Very Large Database support to extend the volume of data the database can address in memory.

DIRECTORIES GET JAVA API

JavaSoft last week revealed the Java Naming and Directory Interface API as part of its Enterprise API set. The API is designed to allow developers to tie applications into naming and directory services that comply with the standard. Hewlett-Packard, IBM, and Netscape contributed to the specification, which is out in draft form for comment, and Novell, another partner, has already implemented it in its Novell Directory Services.

BRIEFLY NOTED: ▶ MICROSOFT will post in April Version 2.0 of the WinSock communications protocol for Windows 95 to the download area of its Web site. The company has also rolled out the first version of its Commercial Internet System, formerly code-named Normandy, with support from a host of customers. And Microsoft Visual Studio 97 development tools package will hit the market this week with a rock-bottom price. **▶ FORE** and **HEWLETT-PACKARD** this week will announce a partnership to more tightly integrate Ethernet LAN technology into Asynchronous Transfer Mode (ATM) infrastructures. As part of the agreement, Fore will develop a 155Mbps ATM uplink module for HP's AdvanceStack 2000 stackable switches. **▶ SAP** and **IBM** this week will announce support of Windows NT as a source platform for R/3 business applications running on the IBM DB2 relational database management system. **▶ NETSCAPE** will deliver spreadsheets, word processing, and presentations from Corel before the end of the second quarter of this year. **▶ IBM, INTEL,** and several messaging vendors will announce at the Electronic Messaging Association show next month Business Quality Messaging, an effort to add messaging-oriented middleware functions to volume messaging platforms.

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THIS ISSUE

INFOWORLD ELECTRIC

Stand up and be heard. Join the following discussions on InfoWorld Electric's forums:

■ **Where were you** when 3Com announced its 3Station network workstations in the spring of 1987? Share your memories with us.

■ **Do you believe what you read?** Should there be a minimum standard for news gathering and editorial practices on the Web?

Voice your opinion.

Go to http://www.infoworld.com/pageone/forums/forums.htm.

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Open Market CEO Gary Eichhorn puts his money on e-commerce, *page 47*



Will push technology get pulled over for not having any standards? *page 52*

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Microsoft tries out standard push

■ Proposal is designed to standardize HTML 'push' software

By Jim Balderston and Lynda Radosevich

CHANNEL Definition Format (CDF) — the low-level data-transmission interface announced by Microsoft at Spring Internet World '97, in Los Angeles, last week — may ignite a standards war between Microsoft and Netscape.

Under review by the World Wide Web Consortium (W3C), Microsoft's new standard proposal would define each field on Web pages to ensure consistent content pull.

About 30 vendors said they would support CDF, including PointCast, BackWeb, SoftQuad, Dimension X, and America Online. But most vendors that signed up in support of the CDF are smaller companies that may have the most to fear from the eventual release of Microsoft's Internet Explorer 4.0. That release will up the ante, adding a much more sophisticated pull capability enabled by Microsoft's Active Desktop.

Microsoft's CDF announcement did not receive a warm greeting from rival Netscape.

Marc Andreessen, Netscape's vice president of technology, said he expected CDF to "wither on the vine" because it was unnecessary to standardize a low-level data-transmission specification for pull. Other Netscape executives agreed.

"We'll take a look at it when and if it is something that the W3C or IETF [Internet Engineering Task Force] ask for participation in from other companies," said Daniel Klaussen, group product manager for client marketing at Netscape, in Mountain View, Calif. "Right now, this is nothing more than a proposed standard."

Kim Polese, CEO of Marimba, in Palo Alto, Calif., agreed with the Netscape assessment of CDF.

"This is a very simple protocol," Polese said. "It is very low-end."

Although PointCast and Microsoft are both onboard with CDF, the two are really competitors in the pull market. PointCast announced last week at Internet World that it would allow users to select and have individual Web pages "pushed" to their desktops. Before, PointCast users could only receive information collected by PointCast servers.

"Internet Explorer 4.0 allows any Web site to be a channel," said Brad Chase, vice president of marketing for Microsoft's Internet Client division.

"Functionally, it is the same technology," said Yusuf Mehdi, group product manager at Microsoft, about the new PointCast offering.

PointCast Inc., in Santa Clara, Calif., is at (408) 253-0894 or http://www.pointcast.com.

Microsoft Corp., in Redmond, Wash., is at (206) 882-8080 or http://www.microsoft.com.

Enterprise networks

Novell examines its Borders

By Matthew Woollacott

NOVELL will announce its Border Services technology for linking IntranetWare networks across the Internet next week, but the company has yet to decide whether it will ship it as part of the standard IntranetWare package or sell it separately, sources close to the company said.

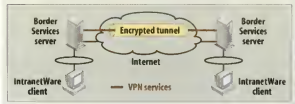
Border Services is Novell's pitch for the "extranet" market. There are three main components covering security services, proxy caching, by storing frequently accessed Web pages. The VPN services, which support Point to Point Protocol, ISDN, analog dial-up, frame-relay, and X.25, use encrypted tunneling to connect networks over the 'net.

Desktop client support will include Windows 3.x, Windows 95 and Windows NT, Macintosh System 7, Unix, and the network computer. On the server side, Windows NT Server and Unix will be supported alongside IntranetWare.

Novell hopes to ship Border Services this summer, perhaps as soon as May.

Novell breaks for the border

Border Services connects IntranetWare networks over the Internet and supports virtual private networks (VPNs) through encrypted tunneling



DREAMLAND, KAREN S.

Integrating the Internet with intranets is becoming a priority for cash-strapped network managers, said Chris Le Tocq, an analyst with Dataquest, in San Jose, Calif.

Novell Inc., in Orem, Utah, can be reached at (801) 429-7000 or http://www.novell.com.

Netscape tilts at enterprise with white-paper initiative

By Amy Doan and Lynda Radosevich

NETSCAPE, in a bid to raise its profile in enterprise-computing applications dominated by IBM and Microsoft, last week outlined an initiative to add transaction-processing tools and an integrated object store to its Web server by next year.

As part of the next iteration of its Web server, code-named Apollo, Netscape will add transaction processing and integrated object-store technology to its Web servers through licensing deals with third-party companies, said Marc Andreessen, Netscape's chief technology officer. In addition, Netscape will bolster its replication technology to challenge Lotus Notes.

This initiative is critical for Netscape, which lags behind both Microsoft and IBM in terms of transaction-processing technology needed to build "extranets." Microsoft will be delivering a tightly integrated version of its existing Transaction Server for its Internet Information Server on Windows NT 5.0 by the end of the year, and IBM will bolster its considerable strength in this area by tightly linking its MQ Series and Transarc transaction tools to Domino server from Lotus. (See related article, page 14.)

"They're going further out on the limb here, talking about features that are some of the most intensive to tackle technically," said Jamie Lewis, president of the Burton Group, in Salt Lake City.

Netscape is also promising enhanced replication using its new object store. The company says it is working on an object store that can reside on the client and server or both and can replicate between the two. Microsoft doesn't have this functionality, however, Lotus currently does.

But Netscape's replication plans are a thorny issue. Netscape has hit a wall getting its lengthy extensions to other standards, such as the Network News Transfer Protocol, adopted. If its final replication scheme is proprietary, the Netscape "open standards" mantra will lose much of its power.

Netscape Communications Corp., based in Mountain View, Calif., is at http://home.netscape.com.

Netscape's road map

Mercury client — ships 1998
Will include Compass as a server-side software agent to filter and track online and "pushed" information.

Apollo server line — ships 1998
Integrated object store for different content types such as images and documents; increased support for workflow and transaction processing; support for distributed objects; and server-side software agents for triggering responses to a given set of events; Gemini software engine for rendering dynamic multimedia content.

Palomar visual — ships midyear
Pre-built HTML, Java, and JavaScript development-tool components for developing commerce applications.

Oracle adds Java and mobility to PC database

By Paul Krill

ORACLE'S PERSONAL Oracle Lite desktop database is being fitted with Java and wireless-communications support this year and will soon function in a Network Computer environment, Oracle confirmed.

Version 3.0, which is due this summer or fall, will support Java-application development, including stored procedures created in Java, said Mark Gaydos, a product manager with Oracle's NC subsidiary, Network Computer, in Redwood Shores, Calif.

The upgrade will allow Java applets within the database to perform functions on data, such as operations related to sales transactions, according to Gaydos.

The company also is working to support Personal Oracle Lite on NCs, Oracle's proposed "thin client" systems, that rival Microsoft- and Intel-based NetPCs. Java applets are a critical element in Oracle's strategy.

Personal Oracle Lite combined with Java could play a key role in the company's drive to entice customers into the NC camp, said Richard Finkelstein, an analyst and president of Performance Computing, in Chicago. Java support means users eventually will not need Windows, he said.

"[Oracle] is getting ready for disconnected Internet use," Finkelstein noted.

Oracle Personal Lite is a small, single-user client database supported on Windows and Macintosh platforms. The present 2.3 release costs $195. Applications utilizing the database can be developed with tools such as Visual Basic.

Prior to Release 3.0, Oracle will integrate its Mobile Agent technology, for asynchronous, store-and-forward messaging in wireless networks, into Version 2.4 of the database. Set for late-April release, Version 2.4 will offer guaranteed delivery of database updates for synchronization with corporate server data, according to Oracle.

Other new features in Version 2.4 include multicolumn indexing, which lets users put indexes across multiple columns for increased performance and data integrity. Oracle also will add outer join support for managing of data by joining various tables.

Version 2.4 also will support read-only databases, in which database applications work with CD-ROM disks.

Oracle Corp., in Redwood Shores, can be reached at (415) 506-7000 or http://www.oracle.com.



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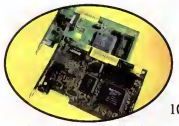
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Electronic commerce

IBM boosts Net.Commerce and ties in D&B

By Chris Jones

IBM's electronic-commerce division was busy at last week's Spring Internet World '97 show, in Los Angeles, announcing a service with Dun & Bradstreet to identify Web-based businesses and plans for a new version of its core Net.Commerce merchant server.

As the hub of its CommercePoint electronic products and services, Net.Commerce includes the storefront building tools and software necessary for processing payment and other transactions over the Internet. The new version, expected in the next two weeks, adds support for ODBC databases, which will give businesses better back-end integration and real-time updating of inventory and other information on storefronts.

This spring, IBM will add inference- and artificial-intelligence-based tools to Net.Commerce to help users find products faster by letting them qualify searches by price, features, and other variables that match their requirements.

Tom Patterson, IBM's chief strategist for e-commerce, said that the company's wide variety of service and product offerings are working hand in hand.

"A lot of customers want to start out with hosted services before investing money in in-house operations," Patterson said. "We're offering a range of services that give them an easy and affordable entry point."

Other tools that integrate with IBM's commerce framework will be rolling out soon, including support for Tivoli products in Net.Data, which is software that links business systems. Interactive Network Dispatcher, software that links multiple Web servers to function as a single system and distributes traffic to the best available server, will be out as a beta version for Windows NT and Sun platforms next month.

The IBM and Dun & Bradstreet (D&B) identity-checking service will link D&B's business databases with IBM's World Registry, a digital-certificate-based authentication system, to validate a business to potential partners or customers on the World Wide Web. IBM will also provide DataBolts to customers for accessing D&B databases that hold a variety of business and financial reports. Cryptolope containers will be used to distribute the reports securely over the Web. Using other DataBolts, developers will be able to create intranet applications that integrate D&B databases into business applications.

IBM, in Somers, N.Y., is at http://www.ibm.com.

Exchange and NT will get closer and closer

■ Microsoft ties its messaging into OS

By Amy Doan and Bob Trott

WITH EXCHANGE Server 5.0 just out the door, Microsoft is already looking ahead and making plans to tie future versions of Exchange even more closely to Windows NT.

Exchange 5.0 gets features and vendor luster

Product enhancements

- SMTP and POP3 compliance allow a broader range of e-mail clients
- Lightweight Directory Access Protocol support provides faster standard directory access
- Secure Sockets Layer enhancements beef up security
- Active Messaging allows Web browsers to tap server

Vendor support

- Jetform will add electronic forms workflow tools
- Casahl Technology is offering data replication and migration add-ons
- Trend Micro's ScanMail adds virus protection to Exchange 5.0
- Omtool has unveiled its Exchange 5.0 fax server

A version of Exchange that uses the NT directory is expected to ship 30 to 45 days after the next release of NT, according to Microsoft group product manager Greg Lobdell. NT 5.0 should be ready by year's end at the earliest, but it probably won't be out until next year.

The directory team that had been working under the Exchange umbrella has also been moved to the NT directory team, Lobdell said.

The move signals an attempt by Microsoft to lure users to NT via Exchange, according to many industry experts.

"Everything at Microsoft today revolves around NT. Anything good that they develop will make its way to NT and rely on it eventually," said Mark Levitt, research manager for electronic messaging at International Data Corp., in Framingham, Mass.

Another version of Exchange that boosts the storage capacity from 16GB to 16 terabytes should see daylight later this year, Lobdell said. Microsoft hopes to issue a beta version in the second quarter.

"The next release will be the scalability release," Lobdell said.

Microsoft considers Exchange a "driver-class" product, like Office 97, that prompts IT departments to upgrade their systems. Officials are well aware of the pace they set by pumping out constant upgrades, Lobdell said, noting that Exchange 4.0 was released only last April.

A 120-day trial version of Exchange Server 5.0 can be downloaded for free at http://www.microsoft.com/exchange/.

Microsoft Corp., in Redmond, Wash., is at http://www.microsoft.com/.

Beta release of Internet Explorer 4.0 is delayed

By Lynda Radosevich and Bob Trott

MICROSOFT has delayed the "platform preview" release of Internet Explorer 4.0 until the end of this month, but that didn't stop officials last week at the Spring Internet World '97 conference, in Los Angeles, from showing off push-delivery and animation details in the existing code.



INTERNET EXPLORER 4.0 *will take a two-week pit stop before it hits the road.*

Platform preview is Microsoft's moniker for the first beta release of Explorer. (See Product Reviews, page 93.)

Microsoft admitted to the delay a week after three security flaws were discovered in Internet Explorer (IE) 4.0. In response to the problems, Microsoft recently reached an arrangement with the Computer Emergency Response Team and other security experts to review browser security, said Yusuf Mehdi, a group product manager.

Other measures include a new Web page, called Security Adviser, to keep users abreast of security issues, and an e-mail address for reporting problems (secure@microsoft.com), Mehdi said.

When IE 4.0's platform preview does ship, it will include:

- Smart Favorites, a utility that tells users whether or not anything on their favorite Web pages has changed;
- Outlook Express messaging client (IE 4.0 will work with existing e-mail clients such as cc:Mail);
- FrontPad, a lighter version of the FrontPage Web authoring tool;
- Explorer Administration Kit updates, that let IS managers control what gets "pushed" to the desktops of users; and
- Dynamic HTML, a technique for making HTML elements into an object model that can be animated. Dynamic HTML also enables data for secondary links to stream to a desktop with a page without requiring a separate server call.

Also, IE 4.0 will work as a shell for Windows 95, and users can set up their interface as an Active Desktop that receives information from the Internet and intranets.

Conference attendees appeared impressed with demonstrations, but several said the proof will be in the yet unavailable code.

"It looks great, but I've just seen the marketing hype. Who knows how it really works?" wondered one attendee on the show floor who asked to remain anonymous.

The final version of IE 4.0, which is still scheduled for midyear release, will support the Channel Definition Format (CDF) for push delivery, but CDF won't be available in the platform preview, according to Dave Fester, a product manager. (See related article, page 6.)

Microsoft Corp., in Redmond, Wash., is at (206) 882-8080.

Merchants link to sites with OneConnect

By Chris Jones

FIRST VIRTUAL HOLDINGS will roll out its OneConnect service next month, making it easier for merchants to integrate its e-mail-based Internet commerce software on Web sites and in ad banners.

First Virtual's payment software is based on VirtualPINs, which are assigned to customers to enable credit payments over the Internet. The VirtualPIN transaction software has been integrated with Microsoft's Merchant Server, iCat, The Vision Factory catalog software, and the upcoming JavaSoft Commerce Toolkit. Starting next month, through OneConnect, merchants can get software directly and link to First Virtual's site for transaction processing.

First Virtual is also spreading its technology with VirtualTags in ad banners that use Java and Shockwave to create "moving storefronts," said Pierre Wolff, director of business strategy for First Virtual.

First Virtual's technology gives merchants an advantage in that once they have a user's VirtualPIN, e-mail address, and buying history, renewable fees such as subscriptions can be billed more efficiently via e-mail.

A VPIN Central site will be launched this spring to give special offers on products and services to VirtualPIN holders.

"What you need on the [World Wide] Web is a corollary to direct marketing programs, and First Virtual has it with full-circle marketing," said Harry Fenik, an analyst with Zona Research, in Redwood Shores, Calif. "The loop gets closed electronically."

First Virtual Holdings Inc., in San Diego, is at (619) 793-2700.

For the record

The March 3 Comparison of network OSes (page 1) incorrectly stated that IBM's OS/2 Warp Server 4.0 SMP Feature does not include FTP and Line Printer Daemon servers; the product contains both. This error does not change its score, however. Warp Server's predecessor was LAN Server.

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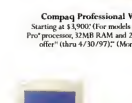
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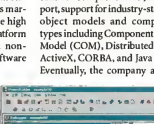
Powersoft aims high

■ Strategy will embrace components

By Ted Smalley Bowen

LOOKING TO AVOID also-ran status in the fast-changing tools market, Powersoft staked out the high ground by offering cross-platform support, scalability, and a nonsectarian approach to software components.

Sybase's Powersoft tools division next quarter will kick off a series of new and renamed products aimed at bolstering the tool lineup's platform, language, and component model support and further leveraging its database design and development capabilities, according to David Boswell, vice president and general manager of the Powersoft tools division.



POWERSOFT'S *forthcoming PowerBuilder 6.0 upgrade, code-named Panther, sports an improved debugger.*

However, Powersoft still lacks a comprehensive middleware strategy, according to John Rymer, an analyst with Giga Information Group, in Cambridge, Mass.

In the wings for next quarter is the Version 6.0 update of the company's flagship client/server development tool, PowerBuilder. The upgrade, code-named Panther, will sport an ActiveX version of the PowerBuilder run time for use in a Web browser, improved distributed-application capabilities, an .EXE profiler, and an advanced debugger.

Overall, Powersoft's blueprint calls for comprehensive Java support, support for industry-standard object models and component types including Component Object Model (COM), Distributed COM, ActiveX, CORBA, and Java Beans. Eventually, the company aims to unify its product line with shared components, such as a common object repository and common configuration management.

Other products slated for release in the second quarter include PowerC++ (formerly Optima++), Version 2.0; the initial rollout of PowerJ (code-named Jato), with Java Beans and ActiveX support; a beta version of PowerSite (formerly NetImpact Studio); and the commercial version of S-Designor 6.0.

The Powersoft Business Group of Sybase Inc., in Concord, Mass., can be reached at (508) 287-1500.

Lotus continues to get closer to MQSeries

By Amy Doan

LOTUS IS THROWING its full weight behind enterprise integration services via a tighter embrace of IBM's MQSeries middleware product and a company restructuring.

Lotus announced internally last week the formation of an Enterprise Integration business unit that includes Edge Research. Edge developed NotesPump, an access tool for Lotus Notes that exploits MQSeries technology.

The new Lotus business unit is charged with improving IBM/Lotus product synergy. The group is also at work on another project that will result in tighter integration between Domino and MQSeries, slated for delivery later this year.

A pending version of Notes will make "intimate use" of a number of MQSeries functions that allow Lotus applications to more transparently interact with the Internet, said one source close to the company.

"They are trying to make MQSeries more Internet-aware," said a developer familiar with Lotus' plans.

Lotus and IBM took the first steps toward integrating Notes with MQSeries in the last release of MQSeries. That version allows Notes, as part of workflow applications, to access transaction-based systems such as CICS.

A dedicated business unit will "give customers a consistent story and a single contact point for integration services," one analyst said.

Lotus Development Corp., in Cambridge, Mass., is at (800) 575-6887 or http://www.lotus.com.

Ed Scannell contributed to this article.

Microsoft begins huge tools rollout with VB 5.0

By Ed Scannell
and Ted Smalley Bowen

MICROSOFT LAST WEEK released the complete version of its Visual Basic 5.0 (VB), Control Creation Edition, setting in motion the avalanche of development tools to be highlighted this week during the company's Developer Days virtual conference.

The software company will detail the pricing and packaging of its Visual Studio tools suite during the satellite-linked global event.

Company officials say the Control Creation Edition of VB 5.0 will make it significantly easier for developers to create ActiveX controls for Internet and intranet applications.

The product's features will be integrated into the Learning, Professional, and Enterprise editions of VB 5.0, due for delivery to retailers later this month.

The Control Creation Edition lets developers package a wide range of functions as a reusable component, which is designed to significantly speed time to market and improve developers' productivity.

The new edition is intended to more rapidly create market opportunities for third-party developers, such as the development of new products that take full advantage of the Control Creation Edition's capabilities. It will also open up new markets for existing products or controls.

"We have released VideoSoft VSDOCX, a product that automatically creates user documentation for controls created by [Control Creation Edition]. We think the easy-to-use ActiveX control-creation capabilities of Visual Basic 5.0 will make it a good choice among developers," said Gustavo Eydelsteyn, president of VideoSoft, in Emeryville, Calif.

Microsoft Corp., in Redmond, Wash., is at at (206) 936-8080 or http://www.microsoft.com/.

TRAILBLAZER · LAND O' LAKES

Oracle CPG integrates operations

By Deborah DeVoe

MILKING PROFITS is an ever-increasing challenge for Land O' Lakes, as margins continue to tighten in the consumer packaged-goods (CPG) industry.

CASE STUDY

The CPG industry is undergoing a transformation: Retailers are pushing responsibility for costs further up the supply chain by relying on just-in-time inventory, requiring manufacturers and distributors to deliver product more often. Customers are also expecting higher and higher levels of service.

For Land O' Lakes, one of the largest U.S. dairy marketers, this challenge recently led the company to choose Oracle CPG, a modular solution announced last month composed of integrated products from Industri-Matematik International (IMI), TSW, Manugistics, and Oracle.

The solution ties together key business processes to streamline business operations. With Oracle CPG, Land O' Lakes will replace its mainframe system with HP 9000 Unix servers running the CPG applications, thus lowering costs and increasing system functionality.

"Our custom-built applications aren't flexible [enough] and don't have the functionality we'll need," said Mark Wilberts, vice president of IS for Land O' Lakes, in St. Paul, Minn.

Instead, Land O' Lakes is relying on Oracle CPG for an integrated suite of Oracle Financials; IMI's System ESS for order management; Oracle Global Enterprise Manufacturing Management System (GEMMS) for manufacturing; and Manugistics for demand and supply planning. The integration offers a common view of inventory, customers, products, and planning by sharing data across the systems and is handled by Oracle and its partners, not the customer.

"The relationship with the partners and Oracle gives us the ability to deploy [new systems] quickly and really change how we do business," Wilberts said.

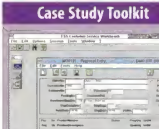
Land O' Lakes' system rollout will be completed in less than two years, saving considerable development time when compared to the five years spent to develop and implement the company's current system.

The dairy giant has already rolled out part of Oracle Financials and GEMMS. Implementation of the Manugistics software is due to start next month and be done by fall. System ESS planning will start in July, with production due in late 1998.

One primary feature that System ESS will offer is the capability to integrate front-end pricing and promotions with back-end processes to provide accurate and efficient invoicing and account settlement at the time orders are taken.

Oracle CPG not only provides integration of the varying components but also offers Oracle as the single point of accountability for the entire solution. Oracle plans to deliver similar integrated solutions in other industry sectors, with a banking and an energy and chemical solution due in a year.

Case Study Toolkit



Oracle CPG *is an integrated client/server software suite designed for consumer packaged-goods manufacturers that consists of more than 30 modules from companies such as Oracle, IMI, TSW, and Manugistics.*

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Strategy at a glance

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Windows CE

Windows tries hard to lose weight

By Mark Leon

JAVA AND NETWORK computers are swooping in to take over desktops, but the folks who do Windows won't go without a fight.

Engineers at Microsoft are moving to convince users that the cure for bloatware, or difficult-to-manage fat clients, will come from Redmond, Wash., in the form of more network-friendly software.

Windows is also getting thinner with Windows CE — a modular, stripped-down version of the OS. Microsoft has developed specifications, code-named Cardinal, for scaling WinCE up to the subnotebook level (see article, right) for machines such as the Libretto 20 from Toshiba, an industry source said. The company has written four reference designs for next-generation handheld PCs, anywhere from 6 inches to 9 inches in length and running lightweight versions of standard productivity applications.

Microsoft's most high-profile move to address bloatware was detailed last week with the NetPC specification announcement. Like Sun's stunted AutoClient project of two years ago, NetPCs are designed to download all data and software from a central server.

The advantage to centralizing applications and data is simpler administration — no more riding herd on unruly software running across a range of desktops.

Another approach involves adding multiuser functions to Windows NT servers and a network-extensible interface to Windows desktops — which Citrix Systems, a small Ft. Lauderdale, Fla., company, has successfully done. Impressed, Microsoft has decided NT needs multiuser functions.

"It's true that Windows 95 has a monolithic windowing system, which is embedded in the OS," said Ira Machefsky, an analyst with Giga Information Group, in Cambridge, Mass. "This is in marked contrast to Unix, which lets you run the application on the server and the windowing system on the desktop. But with the NetPC and Citrix's ICA [Intelligent Console Architecture] software, Microsoft has the NC challenge well in hand."

"The NetPC and a multiuser NT server are both targeted at reducing the cost of managing the OS, applications, and data," says Phil Holden product manager for Windows at Microsoft. "They are different approaches."

Others think Microsoft's position isn't so secure.

"The NetPC is basically life support for the old PC infrastructure," says Tom Rhinelander, an analyst with Forrester Research, in Cambridge, Mass. "Today's PC OS is overkill for what's needed."

In any case, although Window 95 will surely survive and may well flourish, it will become less visible — a suitable irony for what was the most visible OS in the industry's history.

Dan Briody contributed to this article.

Windows changes with the times

Competing client architectures

	PC	NC	NetPC
OS	Windows 95	JavaOS	Windows NT
Storage	Local	Network	Local and network
Software interface	Win32	Java virtual machine	Win32 and ActiveX
Price	$2,000 to $3,000	$700 to $1,000	$1,200 to $2,000
Annual support cost	$2,680	$800	$1,480

SOURCE: FORRESTER RESEARCH

NEC READIES SUBNOTEBOOKS

The Windows CE operating system will begin to move up the product food chain in early 1998 with the introduction of a subnotebook-class mobile unit from NEC, according to industry sources.

Code-named Livingston, the device will use the next generation of NEC's VR4010 chip currently used in NEC handheld devices. This particular embedded processor consumes little power, allowing it to run 30 to 40 hours on AA batteries, sources said.

NEC will be targeting mobile users who do not need a presentation-quality system. The Livingston unit will use either a four-shades-of-gray or color display and will be introduced with either the current version of Windows CE or Windows CE, Version 2, which is due in beta testing by the second quarter. Final release is expected by the third quarter, according to Microsoft officials. Version 2.0 will have a specification for color and include the Java virtual machine and Java libraries.

Livingston will sport a clamshell design with a keyboard and screen larger than the current Windows CE handheld devices and be priced at less than $1,000. It may include a hard drive.

— *Ephraim Schwartz*

Pentium Pro competitors

AMD designs core logic to support its K6 processor

By Andy Santoni

ADVANCED MICRO DEVICES last week jumped into the core-logic chip-set business in a bid to support its K6 Pentium II-competitive processor, due in April.

The K6 will sit in a Pentium-generation Socket 7, and Socket 7 core logic from Intel will not support the latest technologies, such as the Accelerated Graphics Port (AGP), as Intel shifts its emphasis from Pentium (P5)-class processors to the Pentium II (Pentium Pro).

Half the PCs shipped next year will still use Socket 7, said Darrell Benke, director of strategic planning at Cyrix, in Richardson, Texas. Although Intel's Pentium Pro uses the new Slot 1 configuration and Pentium Pro buses, AMD and Cyrix are staying with Socket 7 and a Pentium-like interface for Pentium Progeneration products, he noted.

"AMD just could not depend on Intel to provide the relevant chip sets going forward, especially since Intel's motive is to move people away from the Pentium bus," said Nathan Brookwood, principal analyst at Dataquest, in San Jose, Calif. "It's clear that whether the third-party chip-set suppliers decide to put AGP into their Pentium-style chip sets, there will be at least one alternative that supports the K6 and does that."

Intel's response is that the Pentium Pro processor bus and AGP make for a balanced system, according to Eric Mentzer, director of marketing at Intel's Platform Components Division, in Folsom, Calif. Adding AGP to a Pentium is like using a high-performance transmission with an underpowered engine, he said.

According to AMD, core-logic chip sets for AMD processors are currently available from Acer, ITE, National Semiconductor, Opti, SiS, and Via Technologies.

AMD developed the new AMD-640 chip set under license from Via, noted Dean Hays, director of marketing at AMD.

For now, Hays added, AMD and Via are "basically selling the same thing."

Advanced Micro Devices Inc., in Fremont, Calif., can be reached at http://www.amd.com.

Software AG to run object gauntlet

■ Company prepares relational, object-oriented database

By Paul Krill

SOFTWARE AG, which has been a relatively minor database player, hopes to change that with the release this summer of an enterprise-level database supporting relational data and object extensions, according to the company.

The new product will support storage and management of complex data and information, said Byron Vranas, director of enterprise systems at Software AG's U.S. headquarters, in Reston, Va.

Calling existing object-relational, or "universal server," products inadequate, Vranas said of the Software AG offering will enable customers to use different data types economically. Software AG will go beyond just extending a relational model, he stressed. Market-leading vendors such as Oracle and Informix are fitting their relational databases with object support.

The Software AG product will be supported on major market platforms, presumably Intel and high-volume RISC platforms. It will be unveiled this summer and ship soon after.

Although it offers object support, Software AG's product will be more suitable for large enterprises than current object-oriented databases, Vranas said. He indicated that new algorithms for storing and retrieving data will be critical to the upcoming product.

Becoming a major database vendor will be a challenge for Software AG. The company's current database offerings are Adabas D, a relational product, and Adabas C, which supports multiple data types and is predominantly on mainframes that have installed bases of about 1,000 customers and 5,000 customers worldwide, respectively. The majority of those customers are outside the United States. The company registered less than 1 percent of total market share in revenues in 1996, whereas leader Oracle had 46 percent of the market, according to a study by IT market-research company the Gartner Group.

If Software AG is to become a major player, it will have to improve its marketing, an analyst said.

"Many technology product [battles] are won not on the merits of the product but on the success of the marketing game," said Frank Gillett, a senior analyst with the Hurwitz Group consulting and research company, in Newton, Mass.

Software AG has developed innovative technology in the past, such as the Esperant natural language query product, which was sold to Speedware last year, Gillett added.

The company should also focus on usefulness, rather than complex, perhaps unnecessary technology, Gillett said.

"For most businesses, complex data types mean a long text field, and that in itself will be a significant advancement," Gillett said.

Software AG also has offerings in the data warehousing, data management, and application development arenas.

Software AG Americas Inc., in Reston, Va., is at (703) 860-5050 or http://www.sagus.com.

Software AG wades into database fray

Relational database management systems: 1996 market share by revenue (approximate)

Company	Percent
Oracle	46 percent
IBM	16 percent
Informix	15 percent
Sybase	8 percent
Microsoft	5 percent
Other	10 percent

SOURCE: GARTNER GROUP

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The Open Group's TurboJ brings Java to Unix

By Mark Leon

THE OPEN GROUP at UniForum '97 last week in San Francisco tried to bolster Unix's image with new research initiatives and renewed commitment to a single Unix specification.

The Open Group Research Institute has announced new software that takes a novel approach to increasing Java performance and revealed middleware that can take a more active role in network-centric computing.

TurboJ, a Java compiler that runs on the major Unix platforms, translates Java byte code into C code and then uses a standard system C compiler to create a native binary.

Java just-in-time (JIT) compilers also create native binary code that is faster than interpreted Java, but JIT compiler code disappears after execution. TurboJ creates persistent shared libraries that run locally as ordinary applications.

TurboJ for HP-UX, Sun Solaris, and AIX is available now to Open Group Research partners. The Open Group Research Institute plans to have a Windows version out by summer. But some observers noted that TurboJ may deviate from the Java spirit of running applications unchanged on many platforms.

A more ambitious initiative from the Open Group Research Institute is the Mobile Objects and Agents Project, funded by the Japanese Ministry of Information Technology and due by year's end.

"This is software to build autonomous agents that can rove the network and carry active threads, state information, and data," said Paul Dale, director of the Open Group Research Institute.

Also, The Open Group announced Single Unix Specification, Version 2, the successor to Unix 95 and a branding service.

"The very meaning of Unix has changed," said Graham Bird, director of branding for The Open Group. "IBM's MVS is now Unix-branded, and there are efforts under way to give NT the Unix brand."

The Open Group, in Cambridge, Mass., is at http://www.opengroup.org.

HP, ALLIES TO BUILD INTRANET SOLUTIONS WITH SERVERS, JAVA

HEWLETT-PACKARD FILLED out its intranet strategy last week by agreeing to license Java Workshop for both HP-UX and Windows NT and agreeing to bundle a variety of third-party Web-enabled applications with HP servers.

A key element of HP's strategy is to deliver a Java virtual machine implementation on all of its platforms, including the MPE, said Daniel Charlu, HP product manager for the general systems division. This strategy will allow HP to deploy applications that span NT, HP-UX, and MPE.

One of the major target areas for these applications will be intranets. Last week at Spring Internet World '97, HP expanded its relationships with several independent software vendors, including Informix, Infospace, Marimba, Netscape, Netscheme Solutions, Novell, and PointCast.

The cornerstone of HP's program, called Access, Collaboration, and Transactions, is a decision to bundle Novell Directory Services (NDS) with HP-UX. Intranet applications will be capable of leveraging NDS across multiple platforms to link applications, according to Jim Murphy, solutions marketing manager for HP's enterprise systems division.

HP's goal is to become a major systems integrator of intranet solutions by leveraging multiple partnerships, Murphy said.

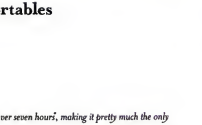
Hewlett-Packard Co., in Palo Alto, Calif., is at http://www.hp.com.

— *Michael Parsons*



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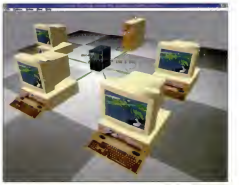
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Microsoft talks Windows futures

■ Details emerge on Windows NT 5.0 and Windows 97

By Cara Cunningham

WHILE STUMPING for its network PC initiative, Microsoft last week also outlined other technologies destined for future releases of Windows NT and Windows 95.

Speaking at the CeBit trade show, in Hannover, Germany, Microsoft executives trumpeted some of the features of the company's pending Windows NT 5.0 upgrade, including Pervasive Plug and Play, task-oriented system customization, and EasyNet, which is a reworking of the NT network-configuration utility.

Officials also highlighted the latest Wolfpack clustering technology, which supports 16 nodes, symmetric-multiprocessing optimizations for eight-processor servers, and support for storage of tape, optical, and disk devices.

The technology elements that are found in Windows NT and Windows 95 are converging, according to Moshe Dunie, vice president of Microsoft's personal and business systems group.

To that end, Microsoft has consolidated its Windows 95 and Windows NT development teams, Dunie said, noting that Windows NT 5.0 and Windows 97 would have in common the OnNow Advanced Configuration and Power Interface, the Universal Serial Bus, the 1394 IEEE high-speed interface, the capability to work with digital video disc drives, DirectX 2.0 and ActiveMovie 2.0 APIs, support for multiple monitors, and the Intel-initiated Accelerated Graphics Port.

Other features expected for Windows 97, code-named Memphis, include improvements to the operating system's backup and dial-up networking capabilities, a quick-resume feature, greater PC Card-modem power management, and FAT-32 support to work with drives that are larger than 2GB.

Although Microsoft officials did not say that its Zero Administration kit will be integrated into Windows 97, as it will be into Windows NT 5.0, the company is adding several related features to the Windows 95 upgrade.

The upgrade will include the Dr. Watson set of debugging tools, improvements to the Sysedit utility, system file verification, and registry rollback, according to Dunie.

Windows 97 is scheduled to enter beta testing in the second quarter.

Microsoft officials declined to offer a release date for the operating system upgrade.

Microsoft Corp., in Redmond, Wash., can be reached at (206) 882-8080 or http://www.microsoft.com.

Clustering

Continued from page 1

recovery features on its clusters, bringing some fault tolerance to Solaris and rivaling the offerings of clustering veterans IBM, Digital, and Hewlett-Packard, analysts said.

However, with distributed clusters based on Intel processors still a ways off, vendors such as Digital and HP are now focusing their efforts to bolster scalability by delivering traditional symmetric multiprocessing (SMP) servers that can accommodate as many as 32 processors.

Code-named WildFire, Digital's server ships this year with an enhanced version of Digital's Memory Channel and a nonuniform memory access (NUMA) architecture to give OpenVMS applications more power, Digital officials confirmed.

That architecture uses middleware, dubbed Galaxies, that minimizes NUMA's inherent latency and gives it the capability to run existing applications and operating systems without modification, according to a source within Digital.

Digital's technology could have major repercussions for Windows NT because that OS could be tweaked to run on Digital's new SMP server, dodging the current scalability limitations of existing operating systems that must be reworked to run on NUMA-based systems, analysts said.

Not to be outdone, HP will launch into commercial markets this year its large SMP server based on Convex supercomputer technology. Called Lancelot, it will run HP-UX and other Unix applications natively.

"Intel really wants this clustering technology to work, because that means they'll sell an awful lot of servers," said an Intel development partner who requested anonymity.

Clustering Intel's commodity hardware could be the least expensive way to create a large SMP server that runs out-of-box software, but stumbling blocks such as the delay of Microsoft's Wolfpack APIs have some wondering when and where such technology will become commercially viable.

Microsoft

Continued from page 1

lock down desktops, block certain user operations, provide centralized configuration of the desktop, eliminate user access to system files and features, and remove the capability to install applications that have not been approved.

It is not the picture of computing simplicity, however: IS managers will have to reformat the hard drives of PCs that already run NT Workstation 4.0, according to Microsoft officials.

The posting of Version 0.9 of the NetPC specification last week was the second prong in the company's answer to the NC paradigm. Microsoft and Intel are touting the NetPC — with its manageability features, sealed chassis, and simplified hardware configuration — as a panacea for the budget-busting IS costs associated with owning and maintaining fleets of commercial PCs.

The specification calls for a 133-MHz Intel Pentium processor or a Windows NT-compatible RISC chip — including Digital's Alpha — and 16MB of RAM, although 32MB of RAM is recommended. (See chart.)

PC vendors Dell, Compaq, and Hewlett-Packard helped develop the NetPC reference specification. Within the next 90 days, they and other system manufacturers will introduce NetPCs based on the profile, according to Microsoft and Intel.

The NetPC specification also complements Intel's Wired for Management (WFM) initiative, which, like Microsoft's Zero Admin, aims to cut the total cost of business computing through the management of networked PCs.

The WFM specification brings the management capabilities of NetPCs to fully configured PCs, said Jesse Treger, NetPC platform marketing manager at Intel, in Hillsboro, Ore.

NetPC system requirements

- Software recognition and management of hardware devices
- Remote manageability
- Automatic system configuration and installation over a network
- Automatic off-hours updating
- Sealed case and no internal slots that end-users can configure
- 133-MHz Intel Pentium or comparable processor with 256KB of Level 2 cache, or a Windows NT-compatible RISC-based chip
- 16MB system RAM required; 32MB recommended
- Upgrade capabilities for RAM and CPU not user accessible

SOURCE: NETPC SYSTEM DESIGN GUIDELINES

Java Beans

Continued from page 1

companies, that could include incorporating some components from OpenDoc into the Java Beans architecture, giving a more robust Java Beans implementation the capability to create object-based compound documents. However, Sun and IBM have not come to any agreement on how use OpenDoc technology within Java Beans.

IBM's decision to downplay OpenDoc's strategic importance also calls into question Apple's plans to utilize the technology as well. (See related article, page 3.)

Both Apple and IBM executives had been talking with Sun about merging the two technologies into a tightly integrated solution offering, referred to variously as Open Beans or JavaDoc, sources said. However, Sun officials balked at the idea of using a container technology that would have to be developed for specific OSes and could not support network computers relying on only rudimentary OSes at the client level.

"When you look at it from our perspective, the landscape has shifted pretty significantly over the last several years," Hebner said. "We had a focus on building OS-specific component-based apps to one of building applications for network computing. IBM's strength and focus is on helping our users reap the benefits of network computing and electronic business solutions and commerce — Java Beans is ideal for that type of environment."

So far, only Oracle and Netscape have committed to supporting a common object architecture alongside Sun and IBM, but the four companies will propose Java Beans as the object container model to the OMG, sources said.

Although the OMG has not yet been approached, the head of the standards body indicated that it wouldn't be a problem to replace OpenDoc with Java Beans.

"As far as I am concerned, trading one component architecture for another is not a bad thing," said Chris Stone, president and chairman of the OMG. "That is the way these vendors work."

IBM, in Armonk, N.Y., can be reached at (914) 765-1900 or http://www.ibm.com. Sun Microsystems Inc., in Mountain View, Calif., can be reached at (415) 960-1300 or http://www.sun.com.

SUN ADDS NC CHIP OPTION

Network computers can be and have been built around a variety of CPUs, including Pentium, ARM, and PowerPC processors and Sparc devices, said Brian Healy, product manager for the JavaStation NC at Sun Microsystems, in Menlo Park, Calif.

The latest NC-capable processor from Sun is the microSparc-IIep, designed by Sun Microelectronics, in Mountain View, Calif., in conjunction with LSI Logic, in Milpitas, Calif. LSI will manufacture the chip.

The $75-to-$95 processor integrates a floating-point unit and memory management, as well as a PCI interface, which requires a separate core-logic chip in other architectures.

The microSparc-IIep will be incorporated into a Sun JavaStation NC sometime this summer, Healy said.

— Andy Santoni

Although the sealed-case design of the NetPC makes management simpler, the task is more difficult with flexible PCs.

"The WFM spec gives you a way to do that," Treger said.

NC backers said the Wintel titans are inadvertently making a case for Java-fueled NCs by pointing out the difficulty of administering PCs.

"The NetPC consortium is admitting how screwed up PC administration is," said Brian Healy, product manager for the JavaStation NC at Sun Microsystems.

Microsoft Corp., in Redmond, Wash., can be reached at http://www.microsoft.com/.

Intel Corp., in Santa Clara, Calif., can be reached at http://www.intel.com/.

Sun Microsystems Inc., in Mountain View, Calif., can be reached at http://www.sun.com/.

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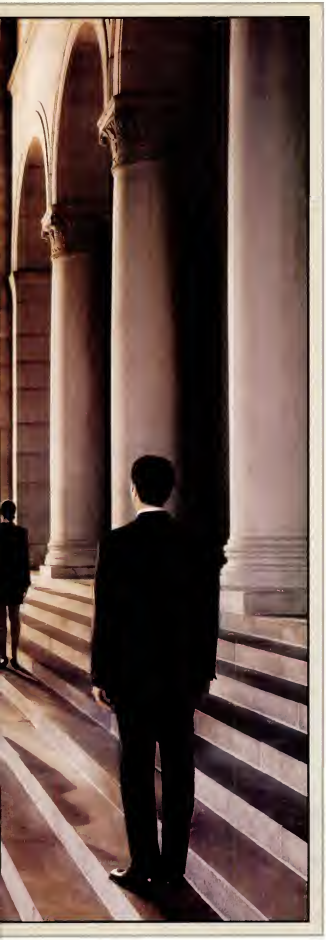
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SHIPPING

EC is shipping three models in its Ready Office line of PCs. The Ready Office 1710, 1715, and 1720 are geared toward the small office/home office with Pentium MMX processors ranging from 166 MHz to 200 MHz. The high-end 1720 comes with a 200-MHz Pentium MMX processor, 256KB of Level 2 cache, 32MB of RAM, a 3.2GB hard drive, a 33.6Kbps modem, a 16-speed CD-ROM, and a Zip drive. Prices range from $2,199 to $2,599 without a monitor. Packard Bell NEC Inc.: (800) 632-4636.

5CALA COMPUTER TELEVISION last week began shipping MultiMedia MM200, a 32-bit Windows on-screen-presentation authoring tool. The product supports Direct X and ActiveMovie, and by year's end, it will feature Web-browser plug-ins to bring television-quality effects and animation to the desktop. 5cala MultiMedia MM200 costs $299. Scala Computer Television Inc.: (800) 947-2252; http://www.scala.com/.

RICOH announced last week that it will be the first to market with a CD-RW (rewritable) drive. The MP6200S, which has a SCSI-2 interface, will read CD-Recordable and CD-ROM media. The CD-RW drive can record at two-speed and read at six-speed. The drives will have a suggested retail price of $599 for an internal unit and will begin shipping later this month. Ricoh Corp.: (800) 955-3453.

ANNOUNCED

DESIGN INTELLIGENCE is letting people try its new I Publish software before its April release by making it a free download from the World Wide Web. I Publish aids simultaneous authoring of newsletters, Web pages, and business presentations, officials said. The software is at http://www.i-publish.com/. Design Intelligence: (206) 343-7797; http://www.design-intelligence.com/.

Mainstream apps redone for thin clients

■ Symantec's Act for Domino debuts as rival Maximizer develops Java software

By Jeff Walsh

SYMANTEC is getting its Act together and taking it on the network-computer road this summer; at the same time, one of its main competitors, Maximizer, plans to ship a version of its software written entirely in Java.

Act for Domino will bring Symantec's contact-management software to Lotus' messaging and Web application server. A Java-enhanced HTML interface will enable users on thin clients to access Act on a server.

Meanwhile, Maximizer Technologies will differentiate itself by shipping a version of its contact-management software written entirely in Java this summer.

Providing new access options is one way vendors can increase use of contact-management software, analysts said.

"On the client side, the information can be made available to a wider number of people," said Chris Le Tocq, a software analyst for Dataquest, in San Jose, Calif.

Symantec will also release Act 1.5 for Lotus Notes 4.5 later this month, a link to U.S. Robotics' PalmPilot in April, and a Microsoft Windows CE version in mid-May, officials said.

The linking software for the PalmPilot will be available for free to Act users, and the Windows CE version of the software will cost less than $100.

Maximizer this week is releasing Maximizer97is (which stands for "internet savvy"). In July, Maximizer plans to release a Windows CE and Java version of its software.

Maximizer PilotLink, which synchronizes with PalmPilot, is already available priced at $49.

Maximizer97is costs $149 and is now available.

Symantec Corp., in Santa Monica, Calif., is at (310) 453-4600.

Maximizer Technologies Inc., in Vancouver, British Columbia, can be reached at (604) 601-8000.

Digital low-end PCs speed up

DIGITAL IS redefining the boundary between the low and high end of its notebook lines by leveling the computing power throughout its portable offerings.

The company has brought 166-MHz processors to its entry-level models in a move to stress portability, communication abilities, and battery life as the new differentiating factors between low-end and high-end mobile computers.

Featuring a new removable combination floppy drive/12-speed CD-ROM module, which enables simultaneous use of both media, the HiNote VP 560, 565, and 575 come with Windows NT 4.0 preloaded with plug-and-play capabilities, a 133-MHz Pentium or 166-MHz Pentium MMX processor, a 12.1-inch Super-VGA screen (dual-scan or thin-film transistor), 16MB of RAM, and a 1.44GB or 2.16GB hard drive. The products are available now; prices range from $2,500 to $4,500.

Efforts by the company to have the portable computer be seen as a "mobile client" of a network have resulted in Windows NT 4.0 being pre-loaded with support for the Desktop Management Interface.

"It's easy to integrate these as clients [on a network]," said Mike McGuire, an analyst with Dataquest, in San Jose, Calif.

Digital Equipment Corp., in Maynard, Mass., is at (800) 344-4825.

— Dan Briody

HOTSEAT

Corporate climates

A former IBM strategist, Bruce Claflin is now managing Digital's PC business

IT HAS BEEN a roller-coaster ride for Bruce Claflin. During his first 14 months as vice president and general manager of Digital's PC business unit, he has seen his unit initially applauded by most industry observers for what appeared to be a remarkable turnaround, only to have its fortunes falter again. A fundamental lack of understanding, along with crippling backlogs, has forced the company to largely abandon the consumer market. Although Digital has made some headway in the corporate market, the company still has a steep hill to climb to get back into the top tier of PC suppliers. But 46-year-old Claflin, a 22-year veteran at IBM, has climbed that hill before. While at IBM, he put together the team and strategy that lifted Big Blue from No. 12 to No. 2 in portables in less than two years. Claflin spoke with Editor at Large Ed Scannell about a range of topics, including some of the company's mistakes in the PC business, its Windows NT strategy, network computers, and Java.



How has your NT strategy evolved during the past year or so?

We have 'NT-ized' our Intel strategy and 'Intel-ized' our NT strategy. We have the PC business right where we want it. Now we are much more focused. A year ago, the sales force was only compensated for the Alpha machines they sold. Now they receive full pay for all the sales. We also decided to invest in markets where we could be much more commercially oriented. We made that change. In hindsight, it was very simple. While we were growing rapidly,

▶ HOT SEAT *page 34*

STREETPRICES *Pentium desktops*

FOR THE WEEK OF MARCH 17

133-MHz Pentium system[1]	Hard drive	Low	High	Average	Change from February
AST Bravo MS P/133	1.2GB	$1,486	$1,861	$1,632	-5%
Compaq Deskpro 2000	1.2GB	$1,510	$1,859	$1,669	-9%
Dell OptiPlex Gs 5133	2.0GB	Direct price		$1,622	-3%
Digital Venturis FX 5133	1.6GB	$1,566	$2,029	$1,750	-3%
Gateway 2000 P5-133	2.5GB	Direct price		$1,574	-2%
HP Vectra XM4 P/133	1.2GB	$1,748	$2,165	$1,866	-4%
IBM PC 350	1.2GB	$1,740	$2,338	$1,977	-2%
Clones/compatibles[2]	1.6GB	$995	$1,668	$1,370	-3%
PowerPC system[1]					
Apple Power Macintosh 7200/120	1.2GB	$1,189	$1,395	$1,271	-5%
Power Computing PowerCenter 150	1.0GB	Direct price		$1,795	-14%

THE LINEUP

Products	Last priced	Next pricing
CD-ROM drives	Feb. 3	May 5
Flatbed scanners	Jan. 6	March 31
Hard drives	March 10	June 2
Ink-jet printers	March 3	May 26
Laser printers	Jan. 27	April 28
17-inch monitors	Jan. 13	April 14
Multifunction printers	Dec. 23	March 24
Pentium desktops	This issue	April 21
Pentium notebooks	Feb. 10	April 7
RAM	Feb. 24	May 12

All recent Street Prices listings are available at http://www.infoworld.com.

InfoWorld Street Prices are based on telephone surveys of resellers, online resources, and on print advertising in computer publications and regional newspapers. Price information was collected between March 2 and March 8.

1. Pentium systems have DOS, Windows, a keyboard, a mouse, 16MB of RAM, and a 15-inch color monitor. Dell and Gateway 2000 systems have an eight-speed CD-ROM drive.

2. Clones and compatibles are systems with the same features as those listed by name, but they are not as widely available.

3. The Power Mac has a 120-MHz PowerPC 601 microprocessor and the PowerCenter has a 150-MHz PowerPC 604 microprocessor. Both PowerPC systems come with 16MB of RAM, System 7.5, a mouse, and an eight-speed CD-ROM drive, but no monitor. The PowerCenter system has a keyboard; the Power Mac does not.

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Data Communications
"Close-Up on Remote Access Servers"
October 1996

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U.S. Robotics enhances its palmtops for network access

U.S. ROBOTICS ANNOUNCED last week two additions to its Pilot line of hand-held computing devices that include extra networking capabilities.

Through Network HotSync technology, PalmPilot Professional and PalmPilot Personal can be connected to a TCP/IP network or directly to a desktop through a portable snap-on modem. Users can synchronize data between the PalmPilot and the desktop and create, reply to, or forward messages from their desktop mailbox, provided they are using Microsoft Mail, Microsoft Exchange, Microsoft Outlook, or Lotus cc:Mail.

These systems also come with a backlit screen, enabling users to increase the display's intensity in darker environments.

"The way that the Pilot integrates easily back into the network is an indicator of where future hand-held computing is going," said Gerry Purdy, president of Mobile Insights, in Mountain View, Calif.

The PalmPilots will also feature an enhanced operating system called PalmOS, with TCP/IP support, that will enable network and Internet-based software development.

PalmPilot Professional comes with 1MB of memory at a price of $399. PalmPilot Personal offers 512KB of memory for a price of $299. The snap-on modem is priced at $129. The HotSync option costs $69. Both PalmPilot products are now shipping.

U.S. Robotics Inc., in Skokie, Ill., is at (800) 342-5877 or http://www.usr.com.

— Dan Briody

"If you buy only one Windows book this year, make it this one."

– Edward Mendelson, PC Magazine

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Hot Seat

Continued from page 31

we were No. 10 in every market, and our size was not translating to profitability. What we said was, we want to grow rapidly but we'd rather grow by being a leader in a smaller number of markets.

Why did you get out of the consumer market?

I asked what we knew about consumers. Basically consumers are brand-aware. When consumers walk into a store, they choose a familiar brand that is feature-rich and low-priced. Well, let's say we spend all this money to find out more information about consumers and to market the Digital brand. It would take millions of dollars, and, just like IBM and Compaq, we'll lose money. You get big by being a leader.

We said: 'Wait a minute, Digital does have a brand in the commercial space; let's leverage it. Digital has a services capability and alliances with Oracle and Microsoft; let's leverage it.' I can't describe how radical a change that is.

What do your users want from you in terms of a network computer?

They want leadership. In my world, everyone asks: 'Are these [NCs] a threat to PCs?' And I say no. Everyone talks about thin clients, but what that means is fat pipes and fat servers, and that plays to Digital's networking strengths.

How might you evolve this server-based strategy?

We will go ahead and license our [NC] technology and widely license it to whoever wants to make the devices, because the more of them out there, the better. Our view is to let a million of them, or 10 million of them, do it and we'll love it. Our value add will be to show how those connect together.

What do you think of the Java phenomenon?

I have said Java is already the winner. It will be the de facto Internet application-development language. We have yet to fully integrate it in our Unix software, and we will integrate it into VMS. It's been already ported to Alpha NT by Microsoft. One of the changes that happened over the course of the year as we took our PC strategy forward: We said we're going to target NT.

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WINDOW MANAGER · BRIAN LIVINGSTON

Readers give tips on fax files, Word files, and .INF files

I WROTE IN MY MARCH 3 column that certain bit patterns in documents could crash some fax software due to flaws in the Class 1/Class 2 fax/modem protocols. (See "Torture test sheds light on fax/modems and some of the troubles they have," page 33.) Symantec's WinFax Pro 8.0, due for release soon, appears to clear up these cases.

Reader John Myers wrote that he had a similar problem using the fax software in Windows 95.

Myers found a work-around for Windows 95's fax applet by turning on the check box marked Disable High Speed Transmission. One way to do this is to run the Modem Properties dialog box in



Microsoft Exchange. Click Tools, Microsoft Fax Tools, Options, Modem, Properties, Advanced, and turn on the check box. This reduces the highest possible fax speed, which should cure the problem I described without affecting other applications' speed settings for the modem.

And now a Word for Office 97 users

It's been reported in previous issues of *InfoWorld* that the version of Word for Windows in Microsoft Office 97 sometimes cannot open documents created by the version of Word in Office 95. The documents can be opened in Word 95 but produce a "corrupt file" message in Word 97.

Reader Richard Eckhouse has found a work-around for this problem. After getting no help from Microsoft's technical support, he found a friendly voice in the Word development group, which said the problem originates in Word's Fast File Save option.

This option, which has been accessible through the Tools, Options menu in Word for years, marginally speeds up minor file saves by appending new material to the end of the current disk file. This is somewhat faster than rewriting the whole file from the beginning and inserting the new material at the appropriate points. If the file contains minor internal errors, however, the Fast File Save option makes a Word 95 file unreadable to Word 97.

Apparently, Word 97 can read files that have its own flavor of internal errors, but not files with Word 95's internal errors, and vice versa.

The work-around is to have Word 95 users turn off Fast File Saves. I have done this as a matter of course on all versions of Word from time immemorial. I found that the Fast File Saves option created files that could not be read by some file-format conversion utilities. I figured the small amount of disk-write time savings was not worth the hassle of possible problems reading the resulting files, and I've never missed the feature.

Never the TWAIN shall meet

Reader Scott Jorgenson wrote that he's found another anomaly in Windows 95B (also known as OEM Service Release 2 or OSR2). Some scanners attached to Win95B via a SCSI port and a TWAIN driver suffer from the message "New unknown hardware" upon each start-up, and Windows requests a nonexistent .INF file.

Although this is harmless, it is irritating. Jorgenson solves the problem by inserting a floppy in drive A: and allowing Win95B to search the disk eight times. Windows then starts normally, without the error message. Your Device Manager now lists eight "other devices" with Properties for an incorrect device driver. But it doesn't matter because TWAIN is really in charge anyway. Sheesh.

Myers, Eckhouse, and Jorgenson will receive the new *Windows 95 Secrets Gold* for being the first to report these tips to me.

Brian Livingston is the co-author of Windows 95 Secrets Gold *and four other Windows books (IDG Books). Send tips to brian_livingston@infoworld.com or fax: (206) 282-1248.*

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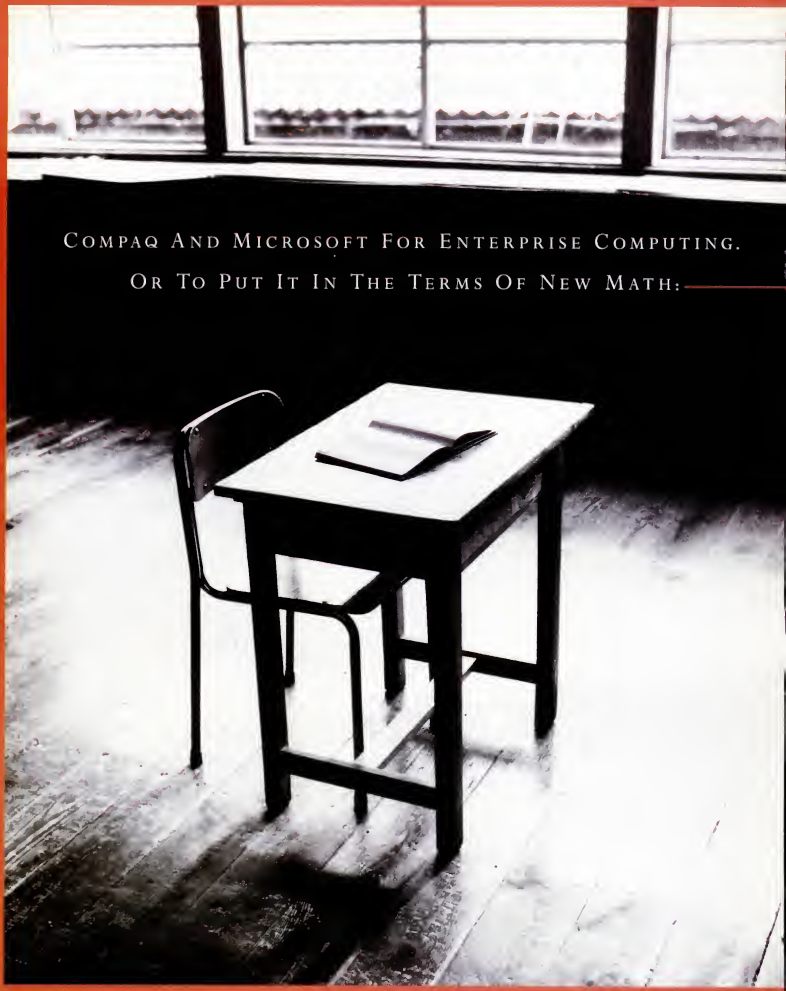
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If you think fast graphics automatically means big bucks, you haven't seen the new DIGITAL Personal Workstation a-Series. Not only does this Alpha workstation run Windows NT® 5D graphics faster than any other workstation, but its price is unbeatable. For example, in the Bench95 benchmark running Pro/ENGINEER,® the DIGITAL Personal Workstation 500a scored a record-setting low 56 minutes, 59% faster than the next fastest competitor for less than half the price.* Our family of Intel® and Alpha platforms gives you support for thousands of Win32 applications. Add to this DIGITAL's wealth of service and support which provides seamless interoperability between your UNIX® and Windows NT operating systems, and you can't ask for more.For less. For your nearest reseller, call 1-800-DIGITAL, or for more information, visit www.workstation.digital.com.



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DIGITAL DPWS 500/2MB cache, 4D40T, 21" display, 256MB memory, CDROM, floppy. Benchmark: 56 minutes. PRICE: $13,300. SGI Indigo 2, 195 MHz R10000, Solid IMPACT, 256MB memory, 21" display, CDROM, floppy. Benchmark: 89 minutes. PRICE: $33,090. © Digital Equipment Corporation, 1997. DIGITAL and the DIGITAL logo are trademarks, PowerStorm is a registered trademark and Whatever It Takes is a service mark of Digital Equipment Corporation. Microsoft and Windows NT are registered trademarks of Microsoft in the U.S. and other countries. PRO/ENGINEER is a registered trademark of Parametric Technology Corporation. UNIX is a registered trademark in the U.S. and other countries, licensed exclusively through X/Open Company, Ltd.

ANNOUNCED

Object-oriented development tools vendor Sapiens International has ported its mainframe development tools and object library to Unix and midrange systems platforms. The company's ObjectPool X-Platform is currently shipping on IBM AS/400 running OS/400 and RS/6000 running AIX, with support for HP9000 servers running HP-UX slated for May. It supports popular databases, including Oracle, Informix, and IBM DB2/6000. The ObjectPool release facilitates the creation of distributed objects and applications across heterogeneous servers. Pricing was not announced. Sapiens International Corp.: (919) 405-1500.

SYMBIOS LOGIC will ship in the third quarter its PCI-to-Fibre Channel host adapter card, the SYM40940, to increase the performance of large symmetrical multiprocessing servers. The product is compliant with Intel's Intelligent I/O technology, allowing as many as 126 devices on a Fibre Channel network to communicate directly and not tie up the host processors. Software to support peer-to-peer networking will be available midyear from Novell, Microsoft, and The Santa Cruz Operation. Symbios Logic Inc.: (800) 856-3093.

SHIPPING

ZENITH DATA SYSTEMS is shipping the Z-Server HX, a server that supports as many as four Pentium Pro processors and has a redundant fan, a hot-swap power supply, and a Mylex RAID controller to boost fault tolerance. The product supports as much as 2GB of error-correcting code memory and has Ultra Wide SCSI controllers. Pricing starts at $15,000, and includes the Z-View Management Suite to monitor systems for hardware and software failure. For a limited time, ZDS will provide a second CPU for free. Zenith Data Systems Inc.: (800) 446-0135.

Microsoft Wolfpack debut hits delays

By Judy DeMocker

MICROSOFT'S APIs for clustering Intel-based servers, code-named Wolfpack, are hitting problems that could delay the software's release until December or early next year, according to sources.

The Windows NT-based software, which promises to deliver a high-availability cluster for less than $10,000, was originally slated for release during the first quarter of this year. A beta version that will provide clustering systems using the software was released in December 1996 to server vendors and development partners Compaq, Digital, Hewlett-Packard, NCR, and Tandem.

Other vendors offering high-availability NT solutions

- Digital
- NCR
- Octopus
- Veritas

According to one analyst, the Wolfpack technology has hit some serious snags.

"The problem is it doesn't work," said Jim Johnson, an analyst at the Standish Group, in Dennis, Mass.

According to Johnson, clustering software that isn't carefully tuned over time can cause unintentional application fail-over, shifting the workload from two servers to one.

Using only half of the cluster's resources, the system is thrown out of balance and that can cause an actual failure, bringing the high-availability solution to its knees.

"Immature fail-over software causes more failures than it protects against," Johnson said.

Not only would users have to deal with a high-availability cluster that

▷ WOLFPACK *page 42*

NEC and Axil ready fault-tolerant Intel servers

By Judy DeMocker

NEC COMPUTER Systems and Axil Computer are raising the reliability of their Intel-based servers by adding redundant hardware to their product lines.

The Axil Northbridge and NEC ProServa lines will ship next month with hot-swap redundant power and disk drives, addressing common causes for hardware failure.

Analysts said the eight-processor Northbridge servers will appeal to users who want more reliable and powerful Intel-based servers that can run Windows applications.

"People want more performance and are not comfortable with the direction clustering is going in," said Jerry Sheridan, an analyst at Dataquest, in San Jose, Calif.

NEC's quad-processor, ProServa HX, will add expansion capabilities, error-correcting code memory, a redundant, hot-swap power supply, and disk drives.

Axil, which to date has offered only Sparc-based workstations, will add more comprehensive four- and 16-processor offerings next year.

Axil's eight-way server is the first of its kind, based on its Adaptive Memory Crossbar chip set, that gives users a way to link two low-cost quad-processor boards. (See "Vendors ready eight-way Pentium Pro servers," Feb. 24, page 6.)

Axil's Northbridge NX 801 with the 200-MHz Pentium Pro and 512KB of cache costs $150,000. Systems can be upgraded to Intel's 300MHz+ Deschutes processor when it becomes available in early 1998, the company said.

NEC's ProServa HX is priced starting at $16,330 for single-processor systems with 128MB of memory and 8GB of storage. It includes a RAID controller and, for a limited time, a free second CPU — a $2,000 value.

Axil Computer Inc., in Santa Clara, Calif., can be reached at (800) 284-2945. NEC Computer Systems, a division of Packard Bell NEC Inc., in Boxborough, Mass., can be reached at (800) 615-5566.



AXIL'S NORTHBRIDGE *server includes an external display for administrators.*

SAS perks up on Java as well as data-mining solutions

By Paul Krill

SAS INSTITUTE will release a beta version of a Java applet for accessing SAS data services and will detail plans for turnkey data-mining products this week at the SAS User Group International Conference, in San Diego.

The applet, called JViewer, is customized for communicating with SAS decision-support products via a Web browser. JViewer will be part of the SAS/IntrNet package for Web access to SAS applications, which goes into beta testing this month with a general release in June.

SAS will also provide details about its licensing of a Java virtual machine and compiler from Sun Microsystems' JavaSoft division, which will enable SAS to have some say in the evolution of Java, according to Chip Kelly, SAS program manager for Web technologies.

SAS' data-mining plans include general-purpose, turnkey offerings, which are known as Data Mining Business Solutions.

"The [data-mining] tools are there now, but there's no turnkey system [which likely will be of benefit to large user sites]," said Arthur Carpenter, senior consultant and SAS specialist with California Occidental Consultants, in Oceanside, Calif.

No details were available on pricing and availability of the data-mining solution.

SAS Institute Inc., in Cary, N.C., can be reached at (919) 677-8000 and http://www.sas.com.

THE BUG REPORT

Server bugs and fixes reported to BugNet

Microsoft Active Server Pages 1.0 If you've placed Microsoft Active Server Pages 1.0 in subdirectories under a virtual root and the subdirectories have restricted access permissions, the server may not be able to access them, and you may get the message "HTTP/1.0 Invalid Application Name." It could be the way Active Server Pages handle Access Control Lists. Allow Full Control for the problem directory or wait for a fix from Microsoft, due in the next service pack.

Notes 3.3x on HP Netserver Ls running NT 3.51 Lotus Notes 3.3x servers running on Windows NT 3.51 and Hewlett-Packard Netserver Ls computers may hang everyday at about 8:45 a.m., due to a problem with NT running on an HP Netserver Ls. A fix is available at ftp://ftp.netserver.hp.com/NETSV_LS/rtc_ini.exe.

NetWare Client 3.5b for NT The Novell NetWare Client 3.5b for NT installs Autoreconnect by default, preventing users from adding or removing network components or administering services. To unlock the service database by disabling the Autoreconnect service or by editing the Registry Editor key \HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\NetWareAutoReconnect. Double-click on "StartREG_DWORD:0x2," and change the value to 0x4. You can switch to Microsoft Gateway Services or Client Services for NetWare Redirector.

Found a bug? *Tell the InfoWorld Electric forum at* http://www.infoworld.com/cgi-bin/displayForums.pl?forums.htm. *For more bug reports, browse to* http://www.bugnet.com, *or send e-mail to* bugnet@bugnet.com.

Sybase preps cross-platform message app

By Paul Krill

SYBASE LATER THIS YEAR will open its upcoming database message-queuing software to support communications with rival databases, allowing developers to ensure transactions between applications in a mixed-database environment.

Called dbQ, the software enables developers in Java, ActiveX, and other platforms to combine databases and message queuing, either in Internet, intranet, or client/server environments.

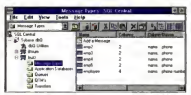
A trial development kit for dbQ is available this week for SunSoft Solaris and Windows NT environments.

The first general release, which will support Sybase SQL Server and IBM's MQ Series messaging middleware, is due later this year. Support for Oracle's namesake DBMS and Microsoft SQL Server is also planned for this year.

Utilizing a concept called "fire and forget" processing, dbQ ensures that transactions are completed, obviating the need for synchronous processing programs, such as a two-phase commit utility. Through Sybase's SQL Anywhere desktop database, remote users can conduct transactions and link up with corporate servers afterward.

The product sounded attractive to a major Sybase user at Stanford University.

"It's definitely something we'll look into," said Patrick Nolan, IS engineer at the Palo



SYBASE'S DBQ *features a GUI for defining message queues.*

Alto, Calif.-based university. "We do a lot of custom coding so that when we do transactions between different databases, [we] make sure that the transaction actually took place."

Pricing has not yet been determined, although it will be server-based, according to Sybase.

Sybase Inc., in Emeryville, Calif., can be reached at (510) 922-3500 or http://www.sybase.com.

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Wolfpack

Continued from page 41

crashes, but the current iterations of Wolfpack do not have the capability to save work in progress while an application restarts on a second server, so users would have to start all over again on any transaction in progress.

Other analysts said the delays were caused in part by the need for Microsoft's development partners to agree upon the content of the Wolfpack APIs and the company's efforts to make the APIs more robust.

"Microsoft may be holding back its APIs so they can combine Phase 1 with some of the features in Phase 2 and add support for efficient load balancing," said Brad Day, senior analyst at the Giga Information Group, in Cambridge, Mass.

If Microsoft can fine-tune its software, users will benefit from an industry-endorsed clustering implementation to create a low-cost, high-availability cluster using off-the-shelf components.

One source within Microsoft estimated that an entire high-availability cluster, including two low-end servers, fail-over software, and a storage subsystem, will be priced at less than $10,000. Sources in the industry also speculate that Microsoft will make the software available on a CD-ROM, which will be priced at about $2,500.

Microsoft Corp., in Redmond, Wash., can be reached at (206) 882-8080 or http://www.microsoft.com/.

www.the-ultimate-display.com

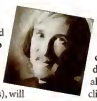
Try it. If you don't agree, we'll give you your money back (but then, of course, you'll have to give back our 21" display).

HELP DESK · BRETT GLASS

Painlessly restart interrupted 'net file transfers

When I use my Windows 95 machine to download large files from the Internet, I'm sometimes disconnected in the middle of the transfer, and I have to start the download again. When I use the ZModem protocol to download files from BBSes, I can resume a file transfer in the middle if I'm cut off. Is the same capability available on the Internet?

J. Fribley



Yes, FTP has a built-in command called reget that allows you to restart a transfer in the middle. Most FTP servers, including the ones in FreeBSD and Linux (the most popular OSes for Web servers), will respond properly to it. Likewise, the FTP clients that come with most Unix systems can issue this command. However, the text-based FTP client that comes with Microsoft Windows 95 does not know how to. Neither, alas, do the stripped-down FTP clients built into most Web browsers. The solution: Get an FTP client that can handle the reget command. Quite a few free and shareware FTP clients support it, and commercial implementations almost always do.

Because the more powerful FTP utility won't be integrated into your Web browser, and because browsers generally throw away incomplete downloads, you'll need to start each of your big file transfers in the FTP client. To do this, position the mouse pointer over the link to the file in your browser. Read the URL from the status box at the bottom of the screen. (It'll begin with ftp:// if it's an FTP link.) Break it into a host name and a file name, and enter both parts into the FTP client. I hope that browsers will gain support for the reget command in the future, and this extra effort will become unnecessary.

I have heard of an Internet fraud in which a Web site causes your modem to hang up and then dial a very expensive international toll call. What's happening? How can we guard against it?

K. Kayser

According to an AT&T representative, this nasty prank was executed via a rogue ActiveX control. (An ActiveX control, unlike a Java applet, is a full-fledged Windows application that can easily take complete control of your machine.) To avoid the problem, don't enable ActiveX controls, or simply use a browser that doesn't support this dangerous feature. You might still get hoodwinked by a network scam, but you'll be far less likely to start a Trojan horse program without knowing it.

Win95 work-arounds

Reader Mohit Goyal has alerted me to a probable cause of the trouble with shifting Zip-drive letters on Windows 95 systems. According to Goyal, when the system is booted with a disk in the Zip drive, it is assigned a drive letter after that of the last hard disk; however, if there's no disk in the drive, it gets a letter later in the alphabet. This does not occur in OS/2 Warp or other OSes, and it is probably related to driver implementation. To work around the problem, "lock down" the drive letter using Windows 95's Device Manager or just remember to insert the Zip cartridge *after* the system boots.

Several readers have also written to say that they've boosted DOS memory under Windows 95 by loading Microsoft's HIMEM.SYS and EMM386.EXE from the CONFIG.SYS file. These memory-management programs allow DOS drivers to be loaded into upper memory. They won't break the 640KB memory barrier, but they may get you as much as 620KB for DOS programs.

Brett Glass' Help Desk answers business-computing questions. To submit a query, call (800) 227-8365, Ext. 702, or send e-mail to brett_glass@infoworld.com. Visit his forum on InfoWorld Electric *at http://www.infoworld.com.*



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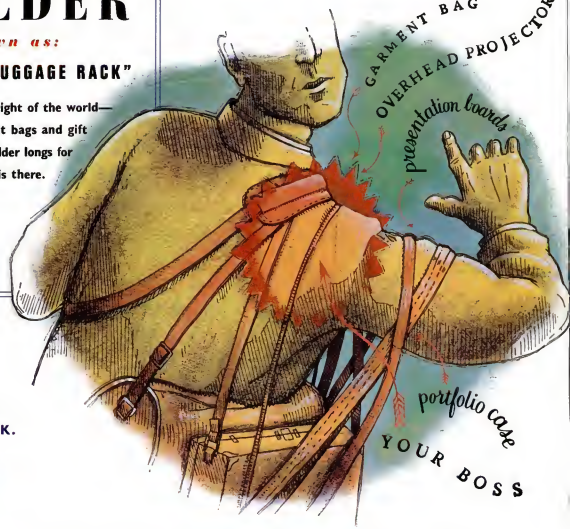
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*Intel Pentium processors with MMX technology available on select models only

PIPELINE

ANNOUNCED

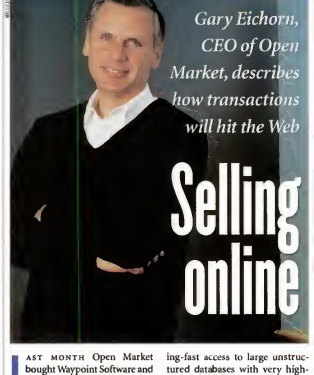
GTE'S CyberTrust division and Maithean announced successful trials of a secure Internet-transaction framework based on CyberTrust's digital certificates and Maithean's digital-wallet technology. The companies expect to announce a public pilot program for their joint efforts involving a major credit-card company by the end of the second quarter. CyberTrust: (617) 455-5180. Maithean Inc.: (510) 838-0752.

ALTAVISTA announced the April availability of FireWall 97 and Tunnel 97 last week. Firewall 97 is an active firewall, while Tunnel 97 allows an intranet to be extended to remote users. Pricing for Firewall 97 starts at $3,995 for 50 nodes. A Tunnel Starter Kit, for 10 users on one server, costs $995. AltaVista Internet Software, a division of Digital Equipment Corp.: (800) 336-7890; http://altavista.software.digital.com.

GUTHY-RENKER INTERNET, a division of Guthy-Renker, announced last week that it has more than 1,100 retailers participating in its America's Choice Mall, up from 125 in January 1996. America's Choice Mall is an online retail outlet. The company also said consumers are taking better advantage of the site — hits per month have risen from 155,000 per month in January 1996 to 3.25 million in December 1996. Guthy-Renker Internet: (310) 581-6250; http://www.choicemall.com.

SHIPPING

E.G. SOFTWARE last week shipped WebTrends 3.0, a Web-traffic analysis tool that now has a database with FastTrends caching that collects and stores analyzed data. It also has intranet configuration and management, advertising management, scheduling, and custom report templates. Priced at $299, WebTrends runs on Windows 95 or Windows NT. e.g. Software Inc.: (503) 294-7025.



HOTSEAT

Gary Eichorn, CEO of Open Market, describes how transactions will hit the Web

Selling online

LAST MONTH Open Market bought Waypoint Software and Folio Corp., acquisitions that will add Internet-based business-to-business catalog software document distribution and management technology to its infrastructure. Gary Eichorn, CEO of Cambridge, Mass.–based Open Market, recently spoke with *InfoWorld* reporter Chris Jones about the rapidly expanding market for electronic commerce.

How will Open Market enable business-to-business communications?

Our OM Transact platform provided for many different payment methods: credit cards, purchase orders, Electronic Data Interchange, electronic cash, frequent-flyer points — because we didn't know what the business model was going to be. We also included lots of attributes like hard goods, soft goods, type of delivery, multiple subscription levels — things like that.

Companies have been building commerce sites and have begun to appreciate some of our original design criteria. We divide our clients into three areas. First there is information commerce, or managing high-value business information. We just strengthened that segment with the Folio acquisition. Folio provides a way to get lightening-fast access to large unstructured databases with very high-security and rights management. We're going to commerce-enable that function to allow people to buy this high-value information.

The second area is business-to-business catalogs. Companies can post large industrial catalogs in a place where business partners can come in and search quickly to find information about a part — schematic diagrams or specifications — all online. That's where Waypoint fits in.

Once your competitor is up on the Web, they have a significant advantage over you.

The third area is retail. On the front end, clients can select any tool they want, such as iChat. Disney is a good example of a retail site, and they use WebObjects from Next. We have a whole other plan for capturing the small and mid-size merchants.

What is that strategy?

We're selling our transaction engine to telecommunications companies, banks, and Internet service providers. They're then offering commerce services to smaller companies.

AT&T has built a service called SecureBuy, and they give their customers a toolkit based on Microsoft's FrontPage. Customers set that up, upload it to the AT&T site, and they commerce-enable it using our

▷ **HOT SEAT** *Page 48*

Xerox takes interfaces into a third dimension

■ InXight pioneers innovative GUIs

By Lynda Radosevich

XEROX MAY HAVE failed to capitalize on the revolutionary graphical user interfaces developed by its Palo Alto Research Center (PARC), but the company is now pioneering a set of 3-D interfaces designed to help users see complex information in more imaginative ways.

InXight, a Xerox company formed in December 1996 to commercialize PARC's innovations, is delivering interface components called VizControls that display large numbers of data objects — the results of a Web search for instance — in 3-D formats that help users see the importance of objects' relationships.

"The problem that we are trying to address is information overload," said Ramana Rao, who is the chief technology officer at InXight.

One VizControl, a Hyperbolic Tree, is a navigational aid that displays file structures in the form of a spherical tree. As users rotate the sphere, the perspective on the links changes.

"That kind of visual environment makes finding information in a directory tree much easier to do," said John Robb, an analyst at Forrester Research, in Cambridge, Mass.

Another control is the Perspective Wall, a 3-D image of a wall that helps users see relationships between documents measured across time and some other property. For instance, doctors could view patient records to spot disease clusters in geographical regions.

VizControls are being integrated into Web-search engines such as InfoSeek and into decision-support applications such as data-warehousing software from ComShare.

Controls available later this year will include Web Forager, which displays documents using a metaphor based on books and rooms; Table Lens, which can be used to view large spreadsheets for statistical spikes or anomalies; and Document Lens, which lets users view documents without losing track of the main one they're working on.

"We're trying to take advantage of humans' ability to process information in a variety of ways," said Mohan Trikha, InXight's president

InXight Inc., in Palo Alto, Calif., is at (415) 852-0290 or http://www.inxight.com.



INXIGHT'S *Hyperbolic Tree enables dynamic visualization of file structures in 3-D.*

THE WEB HOTLIST

Web sites worth checking out

1. **X2 Technology** http://x2.usr.com
Learn about U.S. Robotics' x2 technology and its line of 56Kbps modems. The Technology section contains a white paper, a technical-terms glossary, and information on pulse-code modulation and digital-to-analog conversion.

2. **InCommon's Downtown** http://www.incommon.com
Internet software company InCommon offers Downtown, a push-information delivery system for Windows 95. Take the Quick Tour and learn about Downtown's customizable content channels and "look-ahead" Web-page caching capabilities.

3. **Candle Corp.** http://www.candle.com
Enterprise-networking software vendor Candle offers information on its products and services. Download a trial version of IntelliWatch Monitor, a groupware-management solution for Lotus Notes and Domino.

Send your URL suggestions to james_battey@infoworld.com.

Cornix provides Java support to block ads

By Bob Trott

TIRED OF THOSE flashy banners and blinking medallion ads on your favorite Web page? A Java applet from Cornix will soon enable people surfing the World Wide Web to filter out unwanted advertising.

Tenax Software Engineering is working on Cornix, a Java applet that is part of the company's machine-assisted, reading-software technology.

Cornix is designed to reshuffle Web pages to fit the tastes and needs of users by changing elements such as font size, typeface, color contrast, and display speed.

A big fringe benefit of the technology is that it can block out advertisements.

"You don't see banners or buttons or anything like that," said Cliff High, Tenax cofounder. "The [ad] links will be in a couple of other places, like a main console, a driver's box, or a side window, nicely wrapped up."

The Cornix plug-in is designed to automatically screen out what High called "distractions" on a page, such as background images, digital paper representations, animations, banners, and other "visual clutter" before presenting the text to the user.

Tenax, which hopes to offer Cornix as a full-blown plug-in ready for use by Netscape and Microsoft browsers by July 4, has not decided how much to charge, or if it will be free, High said.

High added that several thousand people have logged on to the company's Web site and asked to participate in the beta program.

The current beta version of the Cornix applet is available at http://www.halcyon.com/chigh/cornix.html.

Tenax Software Engineering, in Olympia, Wash., can be reached at http://www.halcyon.com/chigh/tax.html.



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TECH CORPS

Organizations already providing national sponsorship include Cellular Telecommunications Industry Association Foundation (CTIA) Digital Equipment Corporation and MCI Foundation

Hot Seat

Continued from page 47

SecureLink technology. Then they use AT&T's centrally managed transaction engine to perform the transactions.

We already have deals with service providers in the United States, Canada, the United Kingdom, Australia, and we want to increase our coverage around the world.

By the end of the year, Oracle, IBM, and others will be up and running with some comprehensive e-commerce systems. How will you compete?

Their strengths are their installed base, history, and technology — but those are also disadvantages. Rather than looking at the market with a fresh set of eyes and trying to build everything optimized for the Internet, a lot of companies are trying to evolve from their current base. History has shown that when there is a new computing paradigm, established players don't go away, but one or two new players get added. Focus and experience keeps companies like us in business.

What should we look for from Open Market in the next six months?

We're going to be integrating Folio's information-commerce products. You'll also see more functionality in OM Transact itself and more tools on the front end on our SecureLink, as well as integration technologies to make it easier to bring in and manage content servers.

Is security still a concern for big business doing business on the 'net?

No. I really do see a change between where we are now and where we were a year ago when people were asking "is commerce really going to happen on the 'net?' Now people are saying, 'You know, I really can't afford to wait.'

Once your competitor is up on the Web, they have a significant advantage over you. They've either slashed their distribution costs, dramatically increased their market penetration, or offered customer service that you can only offer if you are Internet-based.

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FROM THE ETHER · BOB METCALFE

When your mother said no pushing, she wasn't talking about this stuff

We've been talking about it for a year or more. And now it's official. The next big thing on the Internet, according to the current cover of *Wired* magazine, is "push."

Here last April, while discussing PointCast (see "The future of Web news is shaping up, and it looks like PointCast," April 22, 1996, page 48), I asked if you'd prefer to pull down your news when you want it or have it pushed at you as it happens. My answer is both, depending on the news.



Hey, I'm not claiming that pull and push are my buzzwords. I picked them up from Michael Zissman, then running Lotus. Zissman spoke about not just pushing information with e-mail, or just pulling it with Web browsers, but having the best of both with, well, Lotus Notes.

So, what exactly is push? Is it e-mail on steroids? Is it the reason e-postage will start to make more sense, as messages grow fat with multimedia? Is push just deferred Web downloads? Is it multimedia newsgroups? Is it narrowcasting? It is all of those.

Is push new? Let's leave that to historians.

Marimba pushed push over the top. CEO Kim Polese's 100-percent-pure Java product, Castanet, convinced most everybody, and finally even *Wired*, that push is hot, or cool, or maybe bad, whatever *Wired* people say these days when something is the cat's meow. See http://www.marimba.com.

As a network plumber, I see push, in its many forms, as an inevitable response to the bogging Internet. Push admits that the Internet's computing and communication capacities are limited.

Push is, in essence, caching. Were the Internet not bogging, browser pull would still be getting us by. Push software moves information you'll be looking for later down onto your personal computer when it gets a chance, hopefully sooner than later. Then, when you are ready, your information will be on your disk for immediate viewing — bam! — instead of trickled down as you sit and wonder whether you should give up and hit your browser's stop button.

Push is personalized. The information pushed onto your disk is selected based on what you are likely to want. Push software collects various profiles of what you are interested in. Push selects information based on those profiles. Push is agent technology. Push is data mining and collaborative filtering.



Push is compression. Knowing what's already been selected for pushing down onto your disk, and what you'll be looking for next, push software sends only the differences. Even push's relatively small incremental updates can themselves be compressed. Push not only anticipates but also lightens the load.

Push is synchronization. Because the Internet is two-way, push software can know when you've updated information pushed onto your disk. It can know when you've filled out a pushed form, for example. Changes on your disk can be reflected back up to push central. In Notes they call this replication.

And push is workflow. Some of the information pushed might require you to take action. That triggers synchronization, which might push an action on to someone else.

All of that is push. And we'll see what else.

Amid all the excitement about push, however, I do have one little question. Upon what protocol standards will push be based?

The Internet's first hot protocol technology was Telnet. Then, in short, came FTP, remote job entry, chat, e-mail, newsgroups, X Windows, network management, and, in the Internet's 20th year, the World Wide Web. All of these are based on standards, mostly from the Internet Engineering Task Force (http://www.ietf.org) and the World Wide Web Consortium (http://www.w3.org).

I hate to get pushy, but is anybody working on standards for push? Let us all know.

In the meantime, Michael Zissman will receive the Electronic Mail Association's Lifetime Achievement Award during EMA '97, April 8-10 in Philadelphia (http://www.ema.org). I'd like to be at EMA '97 to help honor Zissman. I'd love to be at EMA '97's session on e-postage. But, instead, I'll be keynoting the Sixth International World Wide Web Conference (also known as WWW6), April 7-12 at Santa Clara, Calif.'s Santa Clara Convention Center (http://www6conf.slac.stanford.edu). There I'll be arguing that I shouldn't have to eat my Dec. 4, 1995, column predicting Internet collapses during 1996.

WWW6 will probably not be a lifetime-achievement-award situation for me, but you're invited to come watch anyway.

Bob Metcalfe invented Ethernet in 1973 and founded 3Com Corp. in 1979. He receives e-mail at metcalfe@infoworld.com.

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Internet Commerce Expo (ICE) Singopore '97	Singapore	October 22 - 24
Macworld Expo Hong Kong '97	Hong Kong, China	October 31 - November 2
Internet Commerce Expo (ICE) Shanghai '97	Shanghai, China	November 10 - 13
ComNet Shanghai '97	Shanghai, China	November 10 - 13
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* December 27, 1996.

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THIS WEEK

- JDesignerPro 1.5 54C
- WebDBC 3.0 54D
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- NetAttaché Enterprise Solution 54G
- ObjectDancer 1.0 54H
- Inside the Firewall, *by Dave Taylor* 54H

WEB DATA

If you're trying to get real-time legacy database information onto your intranet, a host of tools is available to help you get your job done. This week, we review three of them. Topping the list is Hahtsite 2.0 (see review, right), which offers a complete suite of site- and application-design tools. It's well-suited to enterprise-class, team-based Web development efforts and handles everything from Web page design to back-end data access. Another option is the latest version of JDesignerPro, a tool for creating Java applets that access databases via ODBC. The tool itself is created entirely in Java, so it's readily portable between platforms. Our review of JDesignerPro 1.5 is on page 54C. If Java's not exactly your cup of tea, then try a more HTML-oriented approach: WebDBC 3.0, the second version of a server-side Web scripting tool that includes powerful database-access tools and delivers dynamically generated HTML pages on the fly. We review WebDBC on page 54D.

HOW WE REVIEW

Intranet World reviews examine new products, focusing on their usability, features, and suitability to task. Our expert reviewers rate shipping products on a scale of cold to hot. The authors do not employ the extensive analyses used in Comparisons, so their conclusions may be different.

TALK BACK

Questions, comments, kudos? Send a message to the editor at dylan@infoworld.com. Please include "Talk Back" on the subject line.

▸ **Web application development environment**

Hahtsite: Enterprise-class tool

By Gess Shankar Chances are that your Internet and intranet Web sites have changed dramatically and that revisions continue on a daily, even hourly basis. But although Web application development involves input from more people, varied media formats, and shorter life cycles, it has lacked the sophisticated tools available to traditional client/server developers. Haht Software plans to fill the void with a solid upgrade to its Web authoring system, Hahtsite 2.0, which provides enterprise-quality development, deployment, and a debugging environment.

The Hahtsite integrated development environment (IDE) is a set of tools that developers use to create and publish Web sites. It is designed to work out of the box even on a stand-alone workstation. The IDE includes a single-user version of the Hahtsite's Application Server, plus a 30-day trial version of Quarterdeck's Webstar Web server. You'll also need the production-level version of the Application Server to deploy your applications.



HAHTSITE'S *intuitive development interface enables content creators to manage complex, dynamic sites easily.*

Everything but the kitchen sink

With built-in tools for image editing, image-map definitions, and code creation, every aspect of Web application development can be done within Hahtsite's IDE. It consists of a formidable array of buttons, a Work Window, and a Project Window.

The Project Window contains several folders used to organize and manage all the application resources — HTML pages, images, links, code pages, and more. The Work Window is where you see and work with HTML and application code, images, and other elements.

Also, the Database Connection Manager contains configuration information about all the database connections used in the project.

Drag-and-drop dynamic pages

The design view, which appears in the Work Window, presents you with a hierarchical folder view of your Web site. You add new pages either by importing existing folders and files or by dragging a page template to the appropriate place in the design, then editing it using the page editor.

To add elements to a page, you simply drag them from the Project Window or Database Connection Manager and drop them on the page that you're editing in the Work Window.

Adding and modifying content is made extremely easy with the bevy of buttons for paragraph styles, widgets, wizards for advanced HTML features such as frames, and drag-and-drop hyperlink generation.

But where Hahtsite really shines is in creating dynamic pages. Site developers can simply drag Hahtsite's widgets — reusable, "intelligent" code objects — onto a page. Or developers can create application code using Hahttalk Basic, the native language that the Application Server executes.

Hahttalk is syntactically identical to Microsoft's Visual Basic —you can even cut and paste existing Visual Basic business logic code into the applications you are building with Hahttalk.

Smart widgets add interactivity

Hahtsite comes with a handful of widgets, such as database log-in, database table, and Web form handlers, however, developers can create other widgets using the Hahtsite Software Development Kit (SDK), which provides wizards to simplify widget creation and compilation. The SDK is available separately, but Haht Software will bundle the SDK with the IDE starting April 1.

Hahtsite also offers ODBC connectivity and visual development tools for applications accessing databases.

With Hahttalk, you can access any other program's API — giving Web developers the ability to access data managed by other client/server software.

Excellent debug facilities and the capability to integrate third-party source code control products round out Hahtsite as a serious, enterprise-level Web application development environment.

One-button publishing

Once the site properties have been defined and added to the project, publishing a finished site is a matter of selecting the site and pushing the "publish" button. I found that complex and large sites took quite long to publish from my 486-based test system, so you'll probably want a faster system to run the IDE.

In order to deploy Hahtsite-created applications, you'll need its Application Server, a scalable, multiplatform server for production environments. For fast performance, it connects to your Web server using Netscape API and Internet Server API, or with the slower but more ubiquitous CGI.

The Application Server also overcomes the inherently stateless nature of the World Wide Web by maintaining state information on a per-user/per-application basis.

If you are using teams to develop Web applications that require on-the-fly HTML generation, Hahtsite 2.0 — with its sophisticated server-side and client-side scripting capabilities and publishing ease — offers you a comprehensive solution for creating and maintaining data-driven dynamic Web sites.

Gess Shankar is an electronic publishing and Web consultant and author. He can be reached at gess@earthchannel.com

THE BOTTOM LINE

Hahtsite 2.0

BEST / COLD

A n integrated development system for building, publishing, and maintaining dynamic Web applications, Hahtsite 2.0 is well-suited for enterprise use.

Pros: Comprehensive set of Web object creation tools in the integrated development environment; customizable desktop; integrates with popular source control systems; easy to program Hahttalk Basic for server-side logic; capability of connecting to a wide variety of databases and to any application with callable application logic; Application Server that runs compiled code securely and with high performance; capability of creating custom widgets; excellent documentation and technical support.

Cons: None noted.

Haht Software Inc., *Raleigh, N.C.; (888) 438-4248 (toll-free), (919) 786-5100; fax: (919) 786-5250; http://www.hoht.com.*

Price: *Introductory pricing (until April 1): Hahtsite IDE: $995 per user; Application Server: $2,495 per CPU; software development kit: $695 per user.*

Platforms: *Windows NT or Windows 95 for development; Windows NT, Sun Solaris, HP-UX, and AIX for deployment.*

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▸ Data access tool

JDesignerPro brings data into Java applets with step-by-step system

By Maggie Biggs

ALTHOUGH THERE HAS been much discussion about less-than-mature Java development tools, BulletProof's JDesignerPro 1.5 is the exception. With its well-thought-out, step-by-step development approach and built-in deployment and security features, JDesignerPro is a wonderful way to quickly generate Java applets that allow manipulation of your intranet or Internet data via ODBC.

JDesignerPro is not a general-purpose Java development environment, and it doesn't pretend to be. You can easily create data-aware Java applets using JDesignerPro as a stand-alone environment or use it as a tool within other Java development tools.

The development tools provided in JDesignerPro feel natural to work with, and there is a logical flow in the creation of applets. My simple test applications — customer-account update, credit-card validation, and product-information update — each took about 1 hour to complete using the JDesignerPro tools.

Connecting to new or existing ODBC data sources and selecting tables, columns, and key fields are nicely integrated into the JDesignerPro environment. Any 32-bit ODBC driver can be used. Currently, no support for native database access is included. However, BulletProof has indicated that this will be added in future versions.

JDesignerPro uses Java from end to end (for the server, development environment, and client portions), has integrated CGI support, and provides its own database-server engine called JaggServer.

JDesignerPro also handled the generation of my applets quite well, although the build was a tad slow.

I was disappointed that integrated debugging tools were not included with JDesignerPro, although you can load the code generated with JDesignerPro into another development tool for debugging.



JDESIGNERPRO'S *tabbed interface enables easy access to ODBC data sources.*

JDesignerPro is designed to manage application threads quite well, but I found applet performance to be slow.

A thoughtful set of deployment tools allows easy implementation of your applets. You can use JDesignerPro to build menus and submenus or use the built-in tab logic to launch your applets. You can also easily enforce security with built-in access-control levels to make applets only available to designated people or groups.

BulletProof has also included some other helpful tools in this version of JDesignerPro, such as a charting wizard to view your data in a variety of ways.

The next version, JDesignerPro 2.0, is due this month. Promised enhancements include more drag-and-drop functionality and easier access to methods and properties during development.

Despite the lack of debugging tools and some rather sluggish performance, JDesignerPro shows great strength with its wizardlike approach to Java applet creation and integration of ODBC data. This is one tool worth a test-drive.

Maggie Biggs (maggie_biggs@infoworld.com) is an InfoWorld *technology analyst who specializes in application development.*

THE BOTTOM LINE

JDesignerPro 1.5

COST

EVILS

If you need to quickly build Java applets that expose ODBC data sources to your corporate intranet or Internet clients, JDesignerPro will help. Although it is not a general-purpose Java integrated development environment (IDE), this data-enabling wizard can be used with some popular IDEs or by itself to connect data to your applets.

Pros: Highly intuitive development interface; automatic generation of Java, HTML, and SQL; built-in deployment and access-control mechanisms; inclusion of Java ODBC engine; tools for Java charting, HTML browsing, and e-mail integration.

Cons: Less-than-peppy performance during development and execution; no debugging tools; no support for native database drivers.

BulletProof Corp., *Los Gatos, Calif.; (800) 505-0105, (408) 374-2323; sales@bulletproof.com; http://www.bulletproof.com.*

Price: *$495*

Platforms: *Server: Windows 95, Windows NT, Sun Solaris, HP-UX, AIX; client: any Java-capable device.*

INFO WORLD

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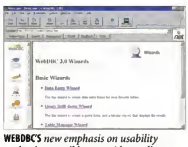
By Kelly Conatser

ONE OF THE MOST obvious uses for an intranet — getting data out of your databases and onto your Web pages — is also becoming one of the most popular, and the number of products that provide such functionality continues to grow.

WebDBC 3.0, the latest version of one of the early entrants into this field, provides documentation, wizards, and tutorials that make it far more accessible to the nonexpert than its predecessor, the promising but arcane Version 2.5. (See Intranet World, May 27, 1996, page IW/1.)

In addition, the product has split into two flavors: an EZ Edition for simple, small-scale intranet projects and an Enterprise Edition for more sophisticated projects. The latter version includes support for both Visual Basic and Java Database Connectivity (JDBC) applications.

I tested the Enterprise Edition and was impressed at the strides that StormCloud Development (formerly Nomad Development) has achieved since the previous release. WebDBC has matured from a hacker's private preserve into a mature, comprehensible product that many Webmasters will be able to use.



WEBDBC'S *new emphasis on usability makes it accessible to a wider audience.*

WebDBC 3.0's three wizards lead me through the process of creating and customizing data-entry and query forms for the database and table of my choosing. However, I did encounter some bugs: The query wizard did not find the records I specified and froze when I tried to modify my query.

Once StormCloud gets the bugs ironed out of these basic wizards, the company should concentrate on creating several more that help novice users take advantage of the product's advanced features.

I found these new advanced features a good deal more gratifying. It's a simple matter to create a basic HTML input form that requests a user's e-mail address. Then using a text editor, you can create an output file that directs WebDBC to interpret the inputs and send a message to the specified e-mail recipient.

THE BOTTOM LINE

WebDBC 3.0



WebDBC is a Web-based data-management system that integrates HTML forms with ODBC-compliant databases.

Pros: Powerful design options; new support for Visual Basic and Java Database Connectivity, or JDBC; improved paper and online documentation.

Cons: Buggy template-building wizards.

StormCloud Development Corp., *Seattle; (206) 812-0177; fax: (206) 812-0178; http://www.stormcloud.com.*

Price: *Single-seat developer license: free; EZ Edition: $595 for a single-server license; Enterprise Edition: $1,295 for a single-server license.*

Platforms: *Windows NT 3.51 or 4.0 (Intel and Alpha processor versions), Windows 95, Sun Solaris.*

You can also include a wide array of Visual Basic commands within an HTML output file by enclosing the Visual Basic code within WebDBC's new <%VB> tags. Added Visual Basic benefits include an online debugger of sorts (that points out the offending line of any substandard code) and a handy, though Spartan, online help file.

Other advanced features clearly position the Enterprise Edition as a viable option for expert Web programmers. A long list of tags and properties allow for almost unlimited customization of HTML input and output pages. Data integration includes potentially powerful options such as support for JDBC and the capability to insert and retrieve binary files from databases.

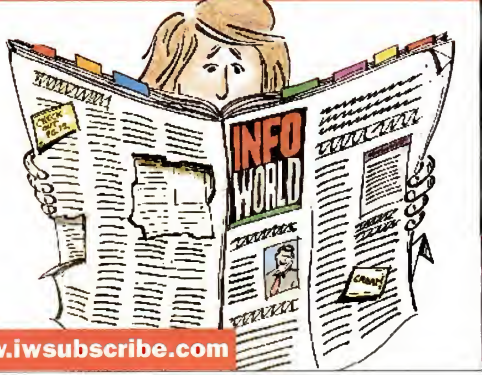
Despite its few remaining rough edges, WebDBC has achieved a level of sophistication that will widen its appeal to a broad spectrum of Web developers.

Kelly Conatser is an independent consultant and author who lives in Kenner, La. His Internet address is kelly_conatser@infoworld.com.

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▸ Offline browsing utility

WebEx gets what you want off the Web

By Kelly Conatser

WANT A LITTLE PIECE of the World Wide Web to call your own? One option is to create your own Web site. But even a one-page site can take a lot of effort. For the contentedly passive, there's a better way: Bring the Web to your hard drive.

That's the idea behind WebEx 2.0 from Traveling Software. I tested the beta version with my Netscape Navigator 3.0 browser. Offline browsing has its limits — but if you keep your searches focused, WebEx and wares like it can be appealing, offering information that's only a few hours old without the aggravation of slow dial-up connections.

BETA

WebEx functions as a task bar that works in conjunction with your Navigator or Microsoft Internet Explorer browser. When you come to a site that you want to download, you click an icon on the toolbar that either downloads the site immediately or schedules it for future delivery. A "digging levels" feature lets you determine how many levels of linked pages you want to store, and a disk-space setting allows you to set hard disk limits. For example, downloading the *InfoWorld Electric* site with one link level retrieved 166 pages and required 995KB of disk space.

THE BOTTOM LINE

WebEx 2.0, beta

WebEx's automatic site-retrieval system downloads the Web sites you specify as you surf the Web or at preset times, allowing you to peruse site information without a live Internet connection.

Pros: Easier management with the Site Manager window; Content Window for hierarchical overview of pages; impressive utility set.

Cons: Dropped site download without generating an error message; limited scheduling options.

***Traveling Software Inc.**, Bothell, Wash.; (800) 343-8080, (206) 483-8088; http://www.travSoft.com.*

***Price:** $50*

***Platforms:** Windows 95 and Windows NT.*

***Ship date:** This month.*

Boosting offline efficiency

WebEx includes several features that make offline browsing more productive. Sites that you download are organized hierarchically in WebEx's Explorer-like Site Manager. Each downloaded site occupies a single WebEx file, making it easy to share downloaded sites.

As an extension to Site Manager, the Content Explorer feature analyzes a downloaded site and presents its constituent pages in hierarchical folder view. It gives you an overview of the Web site, including which page's contents have changed since your last download.

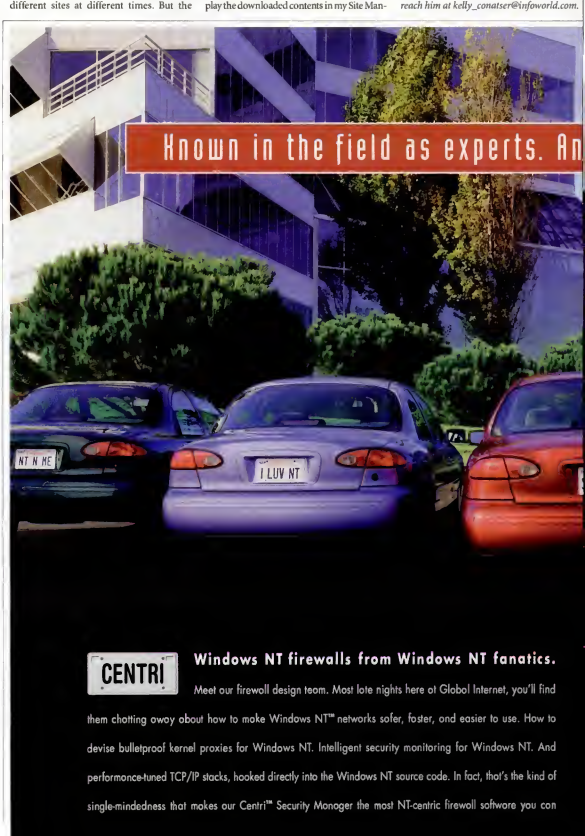
Other features let you conduct searches. You can search online using one of three major search engines or locally using WebEx's internal engine to sift through sites you've already downloaded.

Naturally, there's a utility that lets you schedule automatic connections to the Web through your browser, and you can update different sites at different times. But the scheduling options are somewhat restrictive.

There were a couple of small glitches in this beta version. The first was the failure to correctly download a site on the first try — a well-known weakness that continues to plague offline browsers. Also, switching to another open window during the download seemed to trash a site that had been downloading for 10 minutes, but I later discovered that I could display the downloaded contents in my Site Manager by reissuing the Delivery command.

Overall, WebEx provides a simple, efficient, and useful system for getting what you want off the Web, as long as you have a pretty good idea where to look for the information you want.

Kelly Conatser is an independent consultant and author who lives in Kenner, La. You can reach him at kelly_conatser@infoworld.com.



▸ Web agent solution

NetAttaché automates your Web research

By Mike Heck

WITH ALL THE INTELLIGENT Web search agents available today, two things make Tympani Development's NetAttaché Enterprise Solution stand apart from the rest.

First, NetAttaché Pro 2.1 (the client, Web-agent part of the system) automatically downloads pages meeting your interests and assembles them into well-organized Briefs. Further, its retrieval options are unusually flexible, including an option that highlights what's new on a site.

Second, NetAttaché Enterprise Server 1.01 distributes many kinds of data through standard HTTP (although its primary job involves serving Briefs). You can set up a few workstations running the NetAttaché Pro client agent, and as soon as these agents' searches are complete, their data is posted to the server for viewing by anyone on your intranet with proper security permissions.

Generating Briefs — collections of Web URLs and search queries — occurs quickly. Wizard-style dialog boxes guided me through Web entries and search settings (including the number of levels down from the starting page that NetAttaché follows links on the current site and to externally linked sites).

Another valuable feature, exclusion and inclusion lists, let me ban searches of specific site addresses and skip downloads of particular file types, such as QuickTime movies.

The client software's other retrieval functions surpass those of many competing products. For instance, I could determine if frames or applets were retrieved. Also, the core Smart Search function let me investigate sites using detailed search expressions that contained multiple Boolean operators.

NetAttaché Enterprise Server rounds out the system by giving anyone with a Web browser and TCP/IP connection access to Briefs. Administering the server requires little technical experience because it uses a graphic format much like Windows 95 Explorer. It took about 10 minutes to build several groups of nested folders that represented several file types (such as NetAttaché data, standard HTML documents, and spreadsheet files), as well as departmental groups.

As NetAttaché Pro clients generate Briefs, they're automatically placed on the server in the folder you indicated during setup.

The server's Home Page looks identical to the folder structure created in the server setup. Once I linked to a desired Brief, material was easy to understand and navigate. For instance, you might see links to a site map of the Web entry, along with Smart Search matches.

In contrast to many other Web agents, which merely download raw data, NetAttaché Enterprise Solution has sophisticated search, filtering, and — with NetAttaché Enterprise Server — information-distribution features.

Mike Heck, a contributing editor, is manager of electronic promotions for Unisys Corp., in Blue Bell, Pa., where he's responsible for online services. He can be reached at mike_heck@infoworld.com.

THE BOTTOM LINE

NetAttaché Enterprise Solution

This solution, which is composed of NetAttaché Enterprise Server 1.01 and NetAttaché Pro 2.1, helps organizations gather data from frequently visited Web sites and centrally store it for access by authorized workers. The server also posts general corporate data.

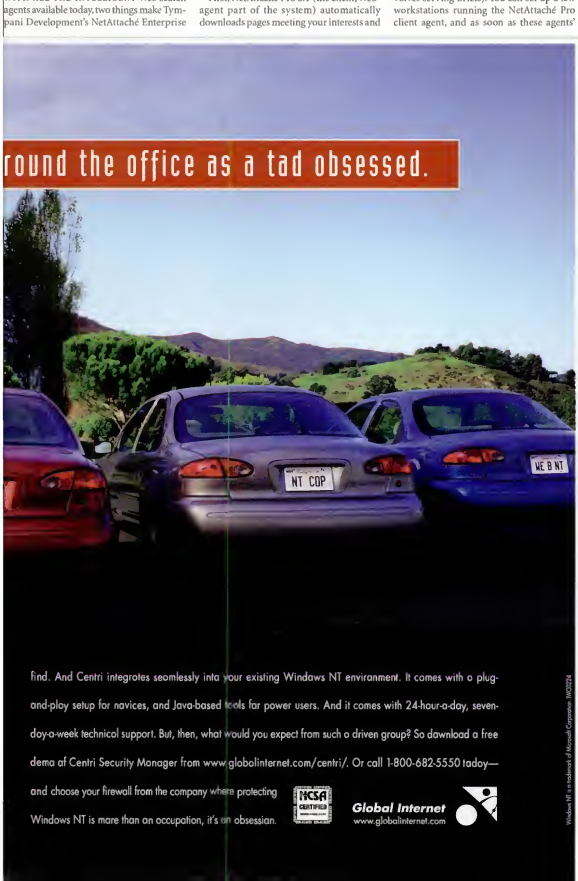
Pros: Capability of monitoring sites for fresh news; revision indicators and filtering; results automatically posted to the NetAttaché Enterprise Server for general access.

Cons: None significant.

Tympani Development Inc., *Sunnyvale, Calif.; (408) 735-9555; http://www.tympani.com.*

Price: *NetAttaché Pro: $50; server: $750 (10-seat license).*

Platforms: *Server: Windows NT, Windows 95; client: Windows 95, Windows NT, Windows 3.1.*



▸Web animation software

ObjectDancer performs simple, powerful animation

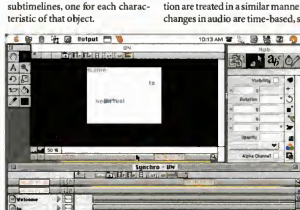
■ PaceWorks application allows you to synchronize objects and sound

By Serg Koren

PACEWORKS' OBJECTDANCER 1.0 gives you the power to create eye-catching Web animations with as much ease or complexity as you desire. Within minutes you'll have simple animations; with a little more time and learning, you can produce a virtual ballet of objects — complete with sound — in Java, QuickTime, or animated GIF formats. From simple to complex, ObjectDancer does it well.

ObjectDancer's approach to creating and editing animations is time-based. At any point in time, an object can change any or all of its myriad properties. You program these changes in time and ObjectDancer interpolates — in animation lingo, "tweens" — the object's transformations from one state to the next so that your changes are smooth.

But ObjectDancer can be overwhelming to the first-time user. There are multiple palettes to control previews, tools, time sequencing, effects, and other features. On second look, you'll see that most of these are fairly intuitive. The time-control window, called the Synchronization window, is really the only one that takes a bit of getting used to. This window has a timeline for each object in your animation that determines the object's transitions. Each of these timelines can be further broken down into multiple subtimelines, one for each characteristic of that object.



OBJECTDANCER *offers a wide selection of animation tools to let you control even tiny details along a timeline.*

At its simplest, you can produce an animation by dragging a graphic to the composition window or typing in some text. You position the object where you would like it to be at the beginning or time '0:00.' You then adjust its timeline to a future time, say '0:10,' and then move the object to reflect its new position. You continue to do this until your animation is complete.

Audio tracks and synchronization are treated in a similar manner; changes in audio are time-based, so your object can change along with your audio track.

At ObjectDancer's most complex, you can use Bezier curves to develop routes for your objects to follow. You also can split a typed sentence into individual words or characters and choreograph each letter individually.

One of the more powerful features of ObjectDancer is that each letter inherits the properties of the original parent object (the text). Each letter is pre-choreographed with its parent's movements, plus any additional changes.

Choreographed object movements and transformations (also known as dances) can be exported and saved as libraries that can then be incorporated into other animations or applied to other objects.

One feature that I found sorely lacking is the capability to morph one object into another. All transitions in ObjectDancer are based on the original object.

ObjectDancer can import most standard graphics formats (everything from GIF to QuickTime) and support a range of audio import formats (from .WAV to MIDI and CD audio tracks). In addition to generating animations, it also exports stills in PICT, GIF, or QuickDraw GX formats.

ObjectDancer comes with a slim manual that covers everything in easily understood detail. There are sample animations and an easy-to-follow demonstration and tutorial. One problem: Although several dance libraries are included, they aren't documented anywhere. Also, reference was made in the demonstration to dance libraries I couldn't find in the product.

Overall, ObjectDancer is a powerful animation program that will satisfy many Web designers' animation needs.

THE BOTTOM LINE

ObjectDancer 1.0

BOTTOM LINE

Power and control make ObjectDancer a must-have for serious Web animation tasks.

Pros: Support for most common graphic and audio formats; multiple output formats for cross-platform compatibility; well-written manual.

Cons: Manual lacks glossary; libraries referenced in demo but not included in product; no object-to-object morphing capability.

***PaceWorks Inc.,** Redwood City, Calif.; (415) 261-6180; fax: (415) 261-0412; http://www.paceworks.com.*
***Price:** $299 estimated street.*
***Platform:** Power Macintosh.*

Serg Koren is an advisory analyst at Tandem Computers Inc., in Philadelphia. He has worked with and programmed computers since 1979. His Internet address is archimag@netaxs.com.

INSIDE THE FIREWALL · DAVE TAYLOR

Macintosh printing solution is not pretty, but it works

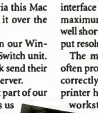
AFTER WEEKS OF THRASHING about — and some great advice and ideas from readers — I am relieved to announce that I finally have a working Macintosh-to-PC printer networking solution in our office. That's the good news. The bad news is that I wasted a fair amount of money and lots of time exploring solutions that couldn't solve our problem.

The solution that worked is ugly, but it does work. We have installed GDT Softworks' PowerPrint Pro, a combined hardware and software solution that lets Macintosh users use non-PostScript printers. It has an AppleTalk wire that connects to an AutoSwitch unit (more on this in a moment), which is in turn hooked directly to the Hewlett-Packard LaserJet.

Another wire goes from the AutoSwitch unit to our office's main Macintosh, which is about 75 feet away. Other Macintoshes can see the printer over AppleTalk via this Mac and can queue up printouts to it over the AutoSwitch connection.

Finally, a third wire goes from our Windows 95 print server to the AutoSwitch unit. Windows systems on the network send their print jobs to the printer via this server.

The AutoSwitch is the weirdest part of our solution. It's a small box that lets us plug in wires from the Windows 95 print server and from the Macintosh. AutoSwitch then automatically lets whichever job is queued first flow to the printer.



The final tab? Dave (a Mac-based NetBIOS driver package) cost $150, PowerPrint Pro cost $219, AutoSwitch cost $69, 100 feet of phone wire cost us about $8, and two AppleTalk connectors cost $20 each. The total price was about $486, plus time and a few dollars for headache remedies.

What's discouraging is that our HP LaserJet 6p could have been upgraded to PostScript for the price of about $280, plus the cost of Dave. Not only that: If we had purchased the LaserJet 6MP instead, it would have been even cheaper to upgrade that unit for PostScript compatibility.

Even more frustrating, the PowerPrint software includes a very well-written printer interface for Mac users, but it only supports a maximum output resolution of 300 dpi — well short of the LaserJet 6P's maximum output resolution of 600 dpi.

The moral: It's the simplest things that often prove the most difficult to get working correctly. When we decided to have the printer hooked directly to the Windows 95 workstation, we never expected that it would take anywhere near a month and cost more than $450 to get the printer working for everyone on the network. By comparison, I could go and buy a new color ink-jet printer, the Apple Color StyleWriter 1500, for only $275.

And yet there's the rub. How can we plan our entire network — all the printing solutions, all the file servers, and all the hubs — so that everything works together correctly, a priori? If we can't do that, are we doomed to these occasional rough edges in network connectivity?

Think about what's happened here: It was a cheaper solution for me to buy an additional printer than to try networking two different computers together to share the same printer.

Other solutions from readers underline this reality. As I noted last week, I could get an inexpensive PC and run Linux on it as a printer server. But how much does it cost to get the PC and configure Linux properly, then go through the entire office and reconfigure each and every PC and Mac to work correctly with this solution?

Another alternative suggested by a reader was to get a network printer controller interface and actually put the printer directly on the network rather than have it hanging off a specific PC.

Intuitively, this is a sensible solution, and the price isn't too bad for the JetDirect hardware upgrade from HP: about $300 (although this is still more expensive than the color inkjet alternative).

An ironic postscript: The same week I got things to work in the office, a copy of PC MacLAN arrived in my other office, and I realized that I could now solve the exact opposite problem there — the PostScript printer was hooked up to the Mac server, but the Windows 95 system couldn't see it.

Dave Taylor, president of The Internet Mall (http://www.internetmall.com), an electronic-commerce and online shopping site, is thoroughly sick of printing problems. You can reach him at taylor@internetmall.com.



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NETWORKING

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mpactdata will ship in June Network Enterprise Tracker, a Windows NT-based hardware and software solution designed to record all network data and traffic for security purposes. Information is stored in a 500GB digital linear tape library. The first version is for 10/100Mbps Ethernet, with versions for other network types following. Prices will start at $75,000. Impactdata: (818) 359-4491; http://www.impactdata.com.

ARIAL is shipping E-Mail Merge 3.1 for Windows 95. The product automatically inserts data from databases such as Microsoft Access, Paradox, and dBase into e-mail messages. Version 3.1 adds an e-mail engine, direct reading of databases, support for attachments, and auto-recovery of failed messages. A trial version is available at Arial's Web site, and the full product costs $79. Arial Software Inc.: (503) 646-4515; http://www.arialsoftware.com.

ANNOUNCED

BAY NETWORKS will next month start shipping two small Fast Ethernet hubs. The four-port FE104 shared 100-Base-TX hub, to be priced at $259, is the size of a videocassette. The eight-port FE108 is slightly larger and will cost $519. Bay has also cut the price of its FA310TX PCI Fast Ethernet network interface card from $115 to $85. Bay Networks Inc.: (408) 988-2400; http://www.baynetworks.com.

LUCENT has announced a service designed to simplify the transmission of software over corporate intranets. Called Terranova Express, it allows electronic storefronts to be set up, and users can then download the applications they need. It is also designed to integrate with third-party software licensing agents, and Lucent is planning to form partnerships with agents to implement the service. Lucent Technologies Inc.: (888) 458-2368 (toll-free); http://www.lucent.com.

Switching and routing hardware

IBM unleashes big networking blitz

By Stephen Lawson

IBM LAST WEEK rolled out a tidal wave of networking gear, including products offering tighter connectivity between mainframes and IP networks, as well as performance enhancements to its LAN and WAN switches.

Big Blue's networking tsunami

IBM's massive rollout last week included these highlights

Product	Availability
8274 ATM OC-12, OC-3 modules	Now
8260 ATM OC-12 modules	April
8276 Ethernet repeater	July
3746 gateway upgrades	June
2216 gateway feature	July
MSS route server upgrades	Now
Nways software upgrades	June

Highlights of the announcement included higher-speed modules for its 8260 backbone switch and its 8273 and 8274 RouteSwitch, enhanced virtual LAN (VLAN) support in the Multiprotocol Switched Services (MSS) server, and TCP/IP host server gateway technology in the 3746 Nways Multiprotocol Controller and 2216 Nways Multiaccess Connector products.

The Super 8260, an enhanced version of the company's flagship Asynchronous Transfer Mode (ATM) cell-switching hub, will feature a 12.8Gbps switching fabric that will support as many as 14 ATM OC-12 (622Mbps) port modules. Existing 8260s can be upgraded to Super 8260 capabilities.

IBM also unveiled 622Mbps modules for the 8274 RouteSwitch, as well as 155Mbps ATM capability. For migration from shared to switched LANs, the company introduced a 36-port 10Base-T repeater that supports four LAN segments and can be linked to the RouteSwitches. Modules introduced for the 8274 will allow users to connect the shared segments into the 13.2Gbps RouteSwitch ATM switching fabric.

The company updated its 8260 MSS Module and 8210 MSS Server with Super VLAN support, providing the ability to communicate between VLANs without going through a router.

IBM also introduced devices for users of its mainframes to connect legacy data to their LANs and WANs. In addition to the introduction of the 2216 Nways Multiprotocol Router, shipping later this month (see "IBM challenges Cisco at high end," March 10, page 3), the 3746 Nways Multiprotocol Controller gateways will be enhanced with the latest Data Link Switching capability for Systems Network Architecture-to-IP connectivity, as well as ISDN, frame relay, and ATM.

Analysts said the moves help to bring IBM into the mainstream.

"They're moving toward standards in multiple ways," said Martha Young, an analyst at McConnell Consulting, based in Boulder, Colo. "They're moving faster than Cisco."

Young said that in some areas, such as RMON and RMON 2 support being added to the 8270 and 8272 workgroup switches, it has surpassed competitors' offerings.

IBM's Network Hardware Division, in Raleigh, N.C., can be reached at (800) 426-2255 or http://www.networking.ibm.com.

CISCO PUTS SNA ON BROWSERS

Last week IBM caught up with Cisco in one area of legacy-to-IP connectivity, but Cisco this week unveiled the latest steps in its strategy to transform information on legacy systems into easy-to-understand Web content.

Cisco announced the first fruits of a pair of partnerships it began last year: a WebConnect server that converts IBM Systems Network Architecture (SNA) data to HTML and a TCP/IP stack for mainframes.

WebConnect allows users to interact with legacy applications through a Web browser interface. An OpenVista programming tool allows enterprises to develop Web interfaces for legacy applications. Using WebConnect, enterprises can also continue to use mainframe emulation programs.

Cisco said it will enhance WebConnect software with the capability to send mainframe print jobs and file transfers from PCs.

Analysts said that Cisco's approach has some advantages over IBM's strategy of adding Web server functions to the mainframe.

"Cisco is saying, 'Rather than converging the networks, why not quarantine the SNA protocols into the data center and then use your browser to access them through HTML?'" said Dave Passmore, an analyst at Decisys, in Sterling, Va. "Your whole network can now be IP."

In the future, Cisco plans to enhance security, scalability, and fault tolerance on combined IP and legacy networks.

Cisco Systems Inc., in San Jose, Calif., can be reached at (408) 526-4000 or http://www.cisco.com.

Lucent's Inferno preparing to provide a universal NOS

■ Version 1.0 offers Javalike portability

By Matthew Woollacott

LUCENT HAS RELEASED Version 1.0 of Inferno, the so-called "Java-killer" network operating system (NOS), which is designed to run on multiple platforms without modification. Lucent wants to see it used on everything from cable TV set-top boxes to network infrastructure equipment such as bridges and routers.

However, the company is depending on third-party licensees to adopt and disseminate Inferno — and it has yet to announce any. Mike Skarzynski, vice president and general manager for Inferno, said that in fact about 22 companies have licensed the technology, and Lucent will announce them in early April. Although he would not name any of the licensees, he confirmed the company has had talks with manufacturers including Alcatel, Ericsson, and Northern Telecom.

Inferno has three main elements: Styx communications; the Limbo programming language; and the Dis "virtual machine." Alongside Limbo, Inferno supports applications written in Java, C, and C++ and contains drivers for audio and speech applications. It can also be integrated with databases supporting the ODBC standard.

The company hopes that Inferno will be implemented in two ways. It will target manufacturers of cable TV set-top boxes and handheld devices, as well as network elements, including routers and bridges. Complementing this, Lucent also wants to see Inferno running as a "virtual system" on top of existing OSes, where it can be used to control the appliances.

For wide area connectivity, the technology is said to support communications over telephone links, the Internet, enterprise networks, cable TV, and satellite broadcast networks.

Inferno's success depends on strong third-party support

Targeted Inferno hardware platforms

Hitachi SH3, DEC StrongARM, Intel Architecture MIPS, Motorola 68030, PowerPC, Sparc, and ARM

Targeted Inferno "virtual system" environments

Windows NT, Windows 95, Sun Solaris, DEC Alpha, HP-UX, and Silicon Graphics' Irix

Although initially perceived as a rival to Java, Skarzynski sees Inferno operating in a different space.

"Java doesn't have an operating system," Skarzynski said. "It has an operating environment. If you want a complete operating system with networking and security, you need Inferno." He also drew a distinction between Inferno and regular NOSes, such as Novell IntranetWare, by saying that "Inferno does the same thing but with a smaller footprint, and greater reach of connectivity. Plus it's independent of microprocessors and network architectures."

Most analysts have adopted a wait-and-see attitude to Inferno, as its success in the market is very dependent on the emergence of strong third-party support.

Lucent Technologies Inc., in Murray Hill, N.J., can be reached at (888) 458-2368 (toll-free) or http://www.lucent.com.

3Com's DRMON grants power to the network clients

3COM THIS WEEK will kick off a vital element in its strategy to empower network clients when it ships its first release of Distributed RMON (DRMON) software.

The Transcend DRMON Edge Monitor System will allow network interface cards (NICs) to gather data on traffic to and from client systems, providing this information for each network node without the need for expensive stand-alone probes or per-port RMON capabilities on network devices.

The DRMON SmartAgent software collects all nine groups of RMON1 data and sends it to an Edge Monitor, a Windows NT workstation that can aggregate data from 1,000 nodes on a single subnet. The data can be viewed through any RMON application. Users can continue to collect RMON information in switches, hubs, and probes.

The NIC software is now available free of charge and is compatible with all 3Com Ethernet and Fast Ethernet NICs produced since 1993. The company plans support in the future for SmartAgents on modems and Token Ring NICs. The Edge Monitor hardware and software is available for $1,495.

Analysts said the Edge Monitor and client-based RMON give administrators more information and allows policies a broader reach across the network.

"It's always good to have extra management at all levels of the network," said Veronica Guerrero, an analyst at Dataquest, in San Jose, Calif. "I'm not convinced users will monitor each end-station, but the option is there so there aren't any black holes."

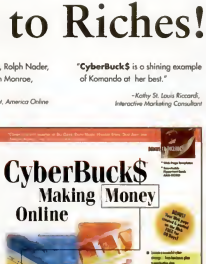
3Com Corp., in Santa Clara, Calif., is at (408) 764-5000 or http://www.3com.com.

— Stephen Lawson

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Proposed protocol gives IP Multicast better reliability

By Stephen Lawson

A PROTOCOL SUBMITTED this month as a standard for IP Multicast is designed to make Internet and intranet broadcasts of data transmissions more reliable.

StarBurst Communications teamed up with Cisco to submit the Multicast File Transfer Protocol (MFTP) to the Internet Engineering Task Force as a standard for software and file distribution over intranets and the Internet. StarBurst will license MFTP free of charge to software and hardware vendors.

In IP Multicast, a server can send a single stream of data, video, or audio packets to selected end-stations, eliminating the need to flood every system or send multiple copies of the data. MFTP provides a way for each end-station to notify the source if packets were not received and for the source to resend all lost packets after the stream has been sent.

> Last week 13 vendors, including AT&T, joined the IP Multicast initiative.

Analysts said reliability is the key to making IP Multicast work for critical data and for many push technologies that currently use less efficient point-to-point transmission.

A service that transmits stock prices in a single stream, for example, would have to send the data reliably as well as simultaneously, said Bruce Robertson, a program director at the Meta Group, a consultancy in Reston, Va.

"The Internet community needs something better than just best-effort multicast," Robertson said. "Most of my customers couldn't care less about TV on their networks, but there are definitely customers who are interested in the reliable delivery of data over their networks."

StarBurst Communications Inc., in Concord, Mass., is at (508) 287-5560 or http://www.starburst.com. Cisco Systems Inc., in San Jose, Calif., can be reached at (408) 526-4000 or http://www.cisco.com.

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56Kbps modem spree shows no sign of letting up soon

THE ONSLAUGHT of 56Kbps modems continues as vendors rush to build momentum for one of two competing technologies prior to ratification of a standard.

In the camp supporting U.S. Robotics' x2 technology is newcomer Packard Bell, which recently said it will build x2 modems based on chips from Texas Instruments in to PCs that will be available in the second quarter.

Also, U.S. Robotics said it has released x2 software for its Total Control remote access server, used primarily by Internet service providers (ISPs) such as America Online, which said it has begun x2 field trials open to members in New York, Washington, San Francisco, Chicago, and Skokie, Ill.

Users investing in 56Kbps modems must be sure their ISP supports the same technology. U.S. Robotics said 400 ISPs have pledged to support x2. On the competing side, a large group of vendors has formed the Open 56K Forum, which is backing the K56flex technology developed by Lucent and Rockwell.

Forum member Microcom said it will ship in April two 56Kbps products: OfficePorte Voice, with a speaker and microphone, and DeskPorte P, which plugs into a parallel port. The expected prices are $189 and $219, respectively. Other forum members, including Boca Research, Diamond Multimedia Systems, and Motorola announced availability or imminent availability of sub-$200 modems.

Separately, start-up SmartLink said it will ship in April a software-based, chipless modem called Modio that provides modem, fax, telephony, and audio functions by tapping the host PC's CPU and sound system.

SmartLink Inc., in San Ramon, Calif., is at (510) 830-9373 or http://www.slink.co.il.

— Lynda Radosevich

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Organizations already providing national sponsorship include Cellular Telecommunications Industry Association Foundation (CTIA) Digital Equipment Corporation and MCI Foundation

Boole & Babbage, BMC plan tighter integration

By Matthew Woollacott

NETWORK MANAGERS faced with the headache of running separate data and application management systems may find relief at hand through an alliance between Boole & Babbage and BMC Software.

Boole is planning to announce this week the integration of BMC's Patrol Management Suite with its Command/Post enterprise availability management system.

Boole's Command/Post is designed to provide an integrated view of the network topology, including hardware, middleware, and applications. Patrol uses intelligent agents and knowledge modules to provide application surveillance, alarm detection, and recovery. The integration component called Patrolview for Command/Post, will allow Patrol reports to be interpreted by Command/Post.

> ▸ BMC Patrol is available for more than 40 databases, OSes, middleware platforms, and business applications.

Saverio Merlo, senior vice president of marketing for Boole, said that customer demand led to the deal: At least 10 of Boole's larger customers already use both products, and integrating the technologies will "shield the user" from the fact that they are running two applications.

One such user is Kevin Rea, section manager for national automated operations at GTE. The company uses Patrol to monitor its distributed client/server environment and Command/Post as "an all-encompassing monitor." Rea said the integration will "allow us to give the technician just one look at the whole network."

Patrolview for Command/Post is due in the second quarter with prices starting at $7,5[illegible]

BMC Software Inc., in Houston, is at (800) 841-2031 or http://www.bmc.com. Boole & Babbage Inc., in San Jose, Calif., is at (800) 544-2152 or http://www.boole.com.

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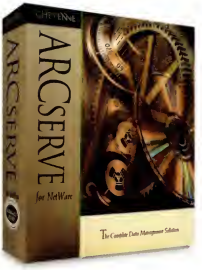
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get a grip

▸Firewall

NetRoad FireWall boosts security at NetWare sites

■ Even though it works in both IP and IPX environments, price is just too hefty

By Mike Avery

ALONG WITH the advantages of extending your LAN to the Internet or a public WAN, comes exposure to attacks from hackers outside your company. The prudent network manager will look for ways to minimize that exposure. Ukiah Software's NetRoad FireWall 1.1 is aimed at NetWare sites that need secure LANs without buying lots of additional hardware.

NetRoad FireWall is one of the few firewalls I know that run under NetWare. Unlike FTP Software's Internet Gateway for NetWare, which runs under both NetWare 3.x and 4.x, NetRoad FireWall will run only under NetWare 4.x. Both products offer Internet access without adding a lot of hardware or other platforms that the system manager may not be familiar with.

THE BOTTOM LINE

NetRoad FireWall 1.1

HOT / COLD

This is an engaging product, but with the price and the immaturity of the product, it is hard to justify the cost of this package.

Pros: Works in both IP and IP/IPX environments; can act as a protocol converter; runs on existing hardware; easy to configure.

Cons: Many little glitches; rather pricey.

Ukiah Software Inc., *Campbell, Calif.; (408) 369-2890; fax: (408) 369-2899; sales@ukiahsoft.com; http://www.ukiahsoft.com.*

Price: *$2,995 for 10 users to $14,995 for unlimited users.*

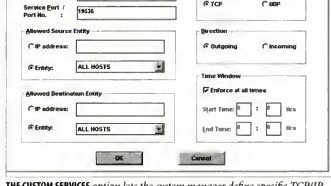
Platforms: *Server: NetWare 4.x; client: Windows 3.x, Windows 95.*

Manual lapses

The manual I received with the product was not the final one, so it would be unfair to make too much of it. However, I hope Ukiah adds more detail covering operations and firewall strategy.

Installation

The installation process consists of server- and client-side segments. But the client-side one is optional. At a site running only TCP/IP, there is no need to install special client software.



THE CUSTOM SERVICES *option lets the system manager define specific TCP/IP services. This enables support for future services without system updates.*

NetRoad FireWall can be configured either from the console or through the Novell Network Administrator for Windows (NWAdmin) program.

To enable NWAdmin to manage the firewall, a snap-in piece must be loaded from a client PC. IPX shops may want to load the IP/IPX client software.

The installation process started smoothly, but the NETROAD NetWare Loadable Module couldn't determine the IP addresses of the network interface cards (NICs) in my file server.

Talking to Ukiah staff revealed that the software doesn't work correctly with NICs that use the archaic but widely used Ethernet 802.3 frame type. The next day, Ukiah had an updated version of the software for me.

Then, the firewall wouldn't initialize. Another phone call revealed

▸NETROAD *page 62D*

THIS WEEK

- Cisco 1604 62B
- WanderLink 2.2 62B
- Loose Cables 62D

WATCH OUT ASCEND

The Cisco 1604 router is an impressive rival to Ascend's Pipeline products. This low-cost router offers grand ease of use and expansion possibilities. It is almost ideal for remote branch offices.

HOW WE REVIEW

Product Reviews examine new products, focusing on their usability, features, and suitability to task. Our expert reviewers rate shipping products on a scale of cold to hot. The authors do not employ the extensive analyses used in Comparisons, so their conclusions may be different.

TALK BACK

Questions, comments, kudos? Send a message to the editor at sarah_varney@infoworld.com. Please include "Talk Back" on the subject line.

▸Internet monitor

WebXRay nabs unruly TCP/IP traffic and corrals bandwidth gluttons

By Laura Wonnacott

MEASURING the toll that TCP/IP services exact on one of today's complex network infrastructures is like trying to snare renegade speeders without a traffic cop. It's hard to determine when Web, FTP, Telnet, and other TCP/IP traffic is consuming too much bandwidth, but overall network performance could easily suffer as a direct result of users abusing TCP/IP services.

WebXRay 1.0, from Cinco Networks, lets administrators regulate traffic and effectively manage multiple TCP/IP applications, but it cannot restrict Web site access.

A topographical view

Within minutes of installing WebXRay, I was monitoring and analyzing TCP/IP applications on *InfoWorld*'s production network. WebXRay's map builder automatically discovers nodes and services and then creates a GUI network topology map.

I easily customized my map by moving objects around to better reflect *InfoWorld*'s network configuration.

The polling function of the topology map provides a snapshot of overall network vitality, and it can issue alerts when nodes become unavailable or are slow to respond. When a node is failing, it automatically changes color. To get more information on a node, I simply drilled down for critical station statistics.

WebXRay's Internet traffic monitor tracks HTTP, FTP, POP3, SMTP, Network News Transfer Protocol, Telnet, Gopher, DNS, and X-Windows traffic in real-time.

Compared with other monitoring tools, such as Optimal's Internet Monitor, WebXRay tracks many more TCP/IP applications. In addition, you can even track a customdefined TCP/IP application. It's easy to add a new TCP/IP service using the included tools.

THE BOTTOM LINE

WebXRay 1.0

HOT / COLD

WebXRay helps administrators easily monitor and analyze TCP/IP traffic to finger bandwidth hogs.

Pros: Inexpensive compared with full-blown protocol analyzers; easy-to-use interface; auto-discovery and topology builder function; five levels of alarms.

Cons: Weak real-time graphic display of Internet activity; unable to restrict Web site access; lacking historical trend analysis; occasional monitor lockup.

Cinco Networks Inc., *Atlanta; (800) 671-9272, (770) 671-9272; fax: (770) 390-9947; sales@cinco.com; http://www.cinco.com; ftp.cinco.com.*

Price: *$1,995*

Platforms: *Windows NT, Windows 95.*

The Web monitor utilities provide a lot of useful information, such as IP address, host name, and the amount of data exchanged. I easily viewed the Web sites our users were visiting and the amount of data they exchanged. You can view the information in server and matrix tables or graphically, though I preferred Optimal Internet Monitor's graphical display of Internet traffic over WebXRay's.

I liked WebXRay's IP matrix table, which easily let me view TopN. TopN shows which users are generating the most traffic. WebXRay also includes a complete protocol distribution function that tracks total packets, octets, percent utilization, packet rate, and average packet size.

Smooth packet filtering

Unlike other Internet monitoring tools, WebXRay includes powerful packet-capture and decode capabilities. Similar to Cinco's NetXRay (a complete protocol analyzer and network monitor), WebXRay makes capturing and decoding packets a breeze.

I quickly built a filter to help isolate and capture traffic between a client and a Web server on our network.

WebXRay includes an alarm manager, which monitors such network conditions as utilization, packets per second, host and service down time, access-control violations, and duplicate IP addressees. I had no difficulty setting alarm thresholds and severity levels. When an alarm is triggered, the alarm manager notes the event in an alarm log and generates an audible alarm.

You can have WebXRay issue an alarm in one of five ways: make an audible beep, send an SNMP trap, send an e-mail message, dial a pager, or execute a program. WebXRay also includes an access-control list that allows you to permit or deny access to a particular host.

The access-control monitor will

▸WEBXRAY *page 62B*

▸ Networking hardware

Cisco's 1604 router boasts impressive expandability

By Brooks Talley

WITH THE introduction of the Cisco 1604, Cisco answers the growing need for easy-to-configure, full-featured, branch-office routers.

I have never encountered a router or an ISDN device that's so easy to deal with, and its low price is an unexpected bonus.

ClickStart lags

Unfortunately, the one flaw I encountered with the 1604 was the ClickStart configuration software. The whole point of ClickStart is to make the router easy to configure for even nontechnical types and to shelter them from the extremely intimidating Cisco command line.

The problem is ClickStart's unclear documentation. Even after reading the engineers' minds by cabling the router and PC as they wanted, it still didn't work right.

The documentation suggests that you cable the router and a desktop PC together via an Ethernet cable. But what the router really wants is to be connected to a PC via a crossover cable or just hung on the same network segment. It also needs to be cabled to the PC via a serial cable.

After I connected the router and PC properly, ClickStart still refused to run. I used a terminal program to send a carriage return to the serial port, and ClickStart started working.

From that point on, configuring the router was exceptionally easy because every important option is available through a friendly Web-based interface. For experienced Cisco techs, even the arcane commands that give complete control over the router are available through the Web interface.

Check-full of features

The 1604 sports a wide range of features, many of which I wouldn't expect in a fairly low-end product.

Chief among these is Network Address Translation (NAT), which allows an entire network to connect to a Point to Point Protocol server and appear as a single IP address.

Although some applications, such as Quake, the popular game from ID Software, won't work using NAT, Cisco has gone out of its way to ensure that most business applications work flawlessly. Passive FTP support is especially welcome.

Impressive expansion

I liked the 1604's promise of future upgradability via expansion cards. Today, a synchronous serial card is the only option available, and it offers 56Kbps through T1 speeds. Cisco says future cards will support better technologies such as xDSL.

Setting up ISDN

Configuring the 1604's ISDN was remarkably easy, comparable to some of the best consumer products. Although it doesn't offer automatic Service Profile Identifier (SPID) detection, its Web interface makes it easy for ISDN novices to configure SPID and phone number options with a simple cue card.



CISCO 1604 *has an ISDN Basic Rate Interface, a built-in network termination device (NT1), and a built-in WAN port.*

In fact, Cisco provides just such a card with the 1604, and it would behoove IS staff to fill it out for nontechnical users.

Aside from the difficulties with ClickStart (it should be easy to configure the router, without a serial cable, using a simple broadcast scheme) this could very well be an Ascend Pipeline killer. Cisco's acceptance among IS professionals should ensure widespread adoption. And even with the somewhat troublesome ClickStart, this is an amazingly easy product to use.

Cisco-heads take note: It is fairly easy to turn on the Web interface without even using ClickStart.

THE BOTTOM LINE

Cisco 1604

COST

BOLD

This is almost the ideal router for remote branch offices. ClickStart could use help, but a great price and superb flexibility make this a superior routing solution.

Pros: Low price combined with high-end features; fairly easy configuration.

Cons: ClickStart somewhat quirky.

Cisco Systems Inc., San Jose, Calif.; (408) 526-4000; http://www.cisco.com.
***Price:** $1,495 with IP routing software.*
***Platform:** Independent.*

Brooks Talley is associate technical manager at the InfoWorld Test Center. You can reach him at brooks_talley@infoworld.com.

QUICK BYTE

WanderLink affords easy remote network access

REMOTE-ACCESS SOFTWARE

WanderLink 2.2

Funk Software's WanderLink 2.2 is the answer to many network managers' wish list, offering easily configurable, inexpensive remote-access services for small to midsize networks. The product includes compression and encryption, too.

WanderLink enables remote users to access existing servers with the addition of only a modem and possibly a high-speed serial port to the server. It runs on NetWare 3.x and 4.x to serve DOS, Windows 3.1, and Windows 95 clients.

Beyond an improved remote-access model, this version boasts a speed compression capability as high as 4:1 for 28.8Kbps modems (depending on the data stream and line quality) and strong cryptographic support to protect data.

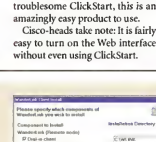
WanderLink supports most off-the-shelf modems but does require that serial ports have 16550 UART (universal asynchronous receiver/transmitter) that can support concurrent high-speed communications.

For this review, I added a high-speed serial I/O card to the Compaq Deskpro for $45. The new board included two serial ports, each with 16550 UARTS. (When you add devices such as this, be sure to disable any onboard or built-in serial I/O devices on the host PC.)

Funk Software's server installation program ensured that my NetWare Loadable Modules (NLMs) were up to date and loaded in the proper order. Setting up users was equally easy with the WanderLink administration program, which I ran from a networked workstation.

WanderLink supports the IP and IPX protocols. It makes setting up IP and DNS addressing very easy.

The product couldn't have been easier to operate. Click on the WanderLink icon, click on connect, and voila! For security-conscious users, WanderLink includes a nifty feature that "fingerprints" authorized machines.



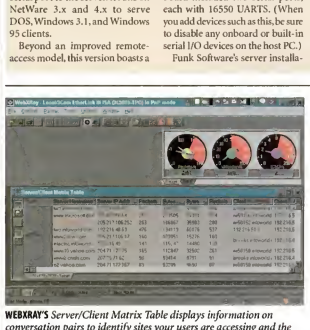
WANDERLINK 2.2 *client installation is simple: Just choose the components you want to install from a pick list.*

If someone tries to reach your network from a nonfingerprinted machine (or one for which the user is not pre-authorized), WanderLink will deny access.

I liked that WanderLink logs both failed and successful accesses in a comma-delimited file for later review and/or reporting.

■ *Funk Software Inc., Cambridge, Mass.; (800) 828-4146; fax: (617) 547-1031; http://www.funk.com; prices range from $495 for two ports to $2,595 for 16 ports.*

— Paul L. Merenbloom, Review Board



WEBXRAY'S *Server/Client Matrix Table displays information on conversation pairs to identify sites your users are accessing and the amount of data they are exchanging. You can easily select the protocols you wish to view.*

WebXRay

Continued from page 62A

generate an alarm when it detects unauthorized access, though it will not block accessibility to a particular host. In addition, WebXRay monitors Internet Control Message Protocol and TCP sync request storms and triggers alarms when these thresholds are exceeded.

WebXRay supports the standard Network Driver Interface Specification for Ethernet, Fast Ethernet, Token Ring, 100VG, and FDDI networks. The product requires 12MB of RAM for a Windows 95 installation and 24MB of RAM for a Windows NT installation. WebXRay supports any network adapter that operates in promiscuous mode.

Although administrators find WebXRay and other Internet monitoring tools informative, users can mistake them for a patrolling force. I strongly recommend that IT shops create formal Internet-access policies that inform employees that their Internet activity is being monitored and the reasons for doing so.

Users will appreciate knowing that managers wish to gauge the impact of TCP/IP activity on network performance, rather than snoop on employees.

———

Laura Wonnacott is technical manager in the InfoWorld Test Center. You can reach her at laura_wonnacott@infoworld.com.



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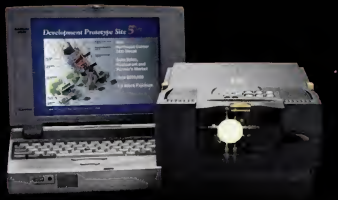
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NetRoad

Continued from page 62A

that the file server I was using to test NetRoad FireWall is also my e-mail server, and the NetRoad FireWall wanted to use the same TCP/IP port that the SMTP mail server was using.

Ukiah's technical support staff told me that they have found problems when the same machine is both a mail server and a firewall. All too often, the machine runs out of disk space and crashes; then both services are lost.

I moved NetRoad FireWall to another file server. From that point, installation was smooth, and the firewall came up with no problems.

For safety's sake, the default configuration doesn't allow any traffic to move through the firewall. You have to configure it — separately enabling inbound and outbound DNS, FTP, HTTP, or SNMP traffic.

Firewall performance

Once I started running NetRoad FireWall, I noticed a slight performance degradation. In my testing, the 133-MHz AMD 5x86-based NetWare 4.1 file server was able to pass about 3.5Mbps.

For most functions, NetRoad FireWall worked well. I was able to access newsgroups, my Internet service provider's POP3 server, and FTP hosts. For Web browsing, it was a mixed bag. Some sites I could get to, some I couldn't.

When I investigated the logging and error-reporting functions, they showed that the troublesome sites were using unusual TCP/IP ports. They were using functions that the firewall was not configured to pass. The custom service configuration options let me add the functions, but every time I turned around, there was a new service hitting the firewall.

After a while, it was almost like a good news/bad news joke. Although a troublesome service would be kept at bay, users would be upset because something wouldn't be working.

Is this a problem with Ukiah? Or is it inherent in the nature of the beast? Everything I've read suggests that once you have a firewall, you have a full-time job.

Internet access

Unlike FTP Software's Internet gateway for NetWare, NetRoad FireWall allows two ways to access the Internet. It can act as a proxy agent and do address conversion between the internal and external networks in an all-IP environment, or it can act as an IP/IPX gateway for an IPX environment. This provides a nice way to support a mixed environment.

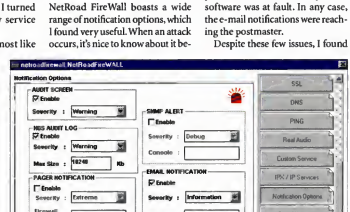
But during testing, I was never quite convinced that the IP/IPX gateway was working. The gateway client software lets you switch between native IP and the IPX gateway, but when I unloaded the IP client software from my PC, the IPX gateway access also stopped working.

Solid notification

NetRoad FireWall boasts a wide range of notification options, which I found very useful. When an attack occurs, it's nice to know about it before the file server, to send the system manager e-mail, or to use SNMP to send out an alert.

The e-mail alerts were sent out as advertised, but they seemed to have some problems passing through my SMTP server. However, at that point it wasn't clear which piece of software was at fault. In any case, the e-mail notifications were reaching the postmaster.

Despite these few issues, I found



NETROAD FIREWALL 1.1, FROM UKIAH SOFTWARE, *offers a variety of notification options, so the system manager can be immediately notified when the firewall detects a break-in attempt.*

improve. The big question here, however, is cost-effectiveness. The cost of the product is high compared with that of a number of other options, including turnkey systems and Unix- or Windows NT-based solutions.

For example, at an all-IPX site, Performance Technologies' Instant Internet is a very attractive solution that provides connectivity, firewall functionality, and hardware for a lower price than NetRoad FireWall.

And Instant Internet can grant or deny Internet access based on the NetWare user ID, something that Ukiah's NetRoad FireWall can't do.

To me, the price for NetRoad FireWall 1.1 seems high. But if the price is right for you, this firewall is a solid alternative.

Source of information

On an end note, firewalls are often difficult to install, difficult to maintain, and difficult to verify. Many IS managers contend that purchasing, setting up, and maintaining firewalls is not a job for the network newcomer, and I'd have to agree. If you are looking for more information about firewalls, a good, if sometimes contentious, source of information is the comp.security.firewalls newsgroup.

Mike Avery is a networking consultant based in Beaumont, Texas, who has designed and supported networks of all sizes. He can be reached at mavery@mail.other when.com.

LOOSE CABLES · TEST CENTER

The rats left OS/2's sinking ship a while back and took the lifeboats along

WE'RE REALLY feeling sorry for OS/2 these days. You may have seen it lose our recent network OS (NOS) comparison, and it was probably as depressing an experience for us as it was for those remaining hard-working people on the OS/2 development team at IBM.

OS/2 has always been a superior NOS in a few key ways and vastly inferior in several other areas. But unlike Windows NT, NetWare, and Sun Solaris, OS/2 is neither really improving on its strengths nor curing its weaknesses.

Installing OS/2 is still a hit-or-miss affair. During the comparison, we often had difficulty installing the NOS on identically configured machines.

Sometimes the installation would only work on Easy Setup, and at other times it would only work on Advanced Setup. With either setup, at times we just had to keep trying until it worked.

In addition, installing OS/2 using a disk controller that's not supported out of the box still requires manually deleting and adding driver files and editing the CONFIG.SYS on one of the disks. For shame!

Dealing with the IS department's reality has never been OS/2's strong suit, but the lack of a real NetWare migration strategy is an especially egregious lapse. It just isn't realistic to expect people to upgrade clients and servers wholesale; OS/2 desperately needs a NetWare emulation function.

What's worse, OS/2's interface — once light-years ahead of the competitors' — has suffered from a near-total lack of development effort, leaving it looking outdated compared with Windows NT's freshly revamped interface. An interface can't make a NOS, but OS/2's dated look is definitely contributing to the operating system's death of a thousand cuts.

OS/2 has such a solid foundation that it's depressing to see it continually mishandled by IBM. Considering the treatment it has received from its own creator, it's amazing that OS/2 has survived as long as it has.

So long, Ipsilon

Ipsilon Networks, once at the forefront of IP switching technology, seems to be throwing in the towel. We liked the company's innovative approach, but it looks as if an entirely too-proprietary solution, combined with lackluster licensing goals, has consigned the company to the "Where are they now?" file along with Spinal Tap.

The most recent indication: A presentation for the Robertson Stevens conference was canceled at the last minute. Ipsilon's motives, of course, remain unknown.

However, we speculate that Ipsilon could not find anyone in the company willing to deliver a presentation in front of, and answer pointed questions from, some 3,000 financial analysts.

IP switching will probably catch on; it makes a great deal of sense. If Ipsilon had had a more sensible approach to it, and had they aggressively pursued licensing initiatives, we might now be writing about the latest come-from-nothing juggernaut. As it stands, though, they look like the latest naught.

surprisingly few problems in this new product. Many of the problems that were pointed out to Ukiah were addressed in a matter of hours, and in all cases the fixes worked. The technical staff was very good.

I expect that this product will

Another prominent no-show at the Robertson Stevens conference was Amazon.com, the online bookseller. Its cancellation caused a stir, and speculation about its future is probably well-founded — even if the company was not.

Deterring the timid

Recent CDs we've received from Microsoft come with an all-new, somewhat surreal admonishment. Printed right on the face of the CD is the instruction, "Do Not Make Illegal Copies Of This Disc." As if when you were about to make a copy of the disc and saw that, it would change your mind.

Someone up there in the grand kingdom of Redmond must have gotten the bright idea that, although people are aware that copying CDs is illegal, they were continuing to do so because there weren't any instructions not to. Or something like that.

If this actually works, we expect to see neatly lettered signs at our corner bank that read, "Do not illegally rob this bank."

This week's Loose Cables was written by Brooks Talley. We welcome commiseration, gripes, rants, and tips. Send us e-mail at loose_cables@infoworld.com.



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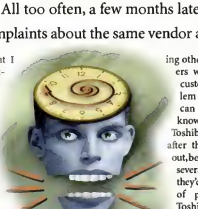
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Public reprimand doesn't stop schoolyard bullies or corporate wrongdoers

Can The Gripe Line do more? I certainly wish it could. It is frustrating that blowing the whistle here on a company that is not supporting its customers causes only momentary embarrassment. All too often, a few months later I'll get the same type of complaints about the same vendor again.



One reader took what I thought was a fairly extreme position on this after my recent column about Toshiba's support woes. (See "Busy signals at Toshiba leave readers wondering whether anybody's home," Jan. 27, page 56.)

"Information like this without corrective action is time-wasting chatter," the reader wrote. "The legitimate role of the media is to get timely information to those who can and should use it."

The reader argued that indeed there is something more The Gripe Line can do.

"There is at least one more thing we can do about Toshiba," the reader wrote. "That is for you [Ed Foster] to set up an e-mail distribution list to every state attorney general, then send them information copies of all complaints received as they come in. Pretty soon they will have a choice of either putting the heat to Toshiba or getting buried in complaints."



America Online was being charged with fraud in a number of states, the reader noted, and it ought to be my goal to see to it that the same thing happened to companies such as Toshiba.

If any state attorney general ignores any input about misrepresentation of this magnitude, then their constituents in turn need to know that, specifically by state. AOL is being charged with fraud in at least 35 states, and Toshiba's misrepresentation of its support is no less fraudulent. So what are we waiting for?"

Now, it's pretty easy to see that there are a few problems with this reader's suggestion. Even a knee-jerk liberal like myself doesn't really think it's a good idea to go crying to a government agency every time people feel they are not getting proper service from a vendor. And if I actually sent all the state attorneys general a copy of every gripe I receive, I'd probably soon be facing harassment charges in all 50 states.

I confess I replied rather brusquely, and maybe a little defensively, to the reader that I didn't like his idea. The Gripe Line, I pointed out, does at least serve the purpose of warning other *InfoWorld* readers who are potential customers about problem vendors so they can avoid them. I know, for example, that Toshiba lost some sales after that column came out, because I heard from several readers who said they'd been on the verge of purchasing some Toshiba notebooks before they read it and changed their minds.

Of course, that isn't much help for the people who already have the vendor's product. Although we'd like to think that any company that we upbraid here will be suitably chastened and get its act together, that hasn't always been the case in the past. It remains to be seen whether Toshiba will make good on the promise to significantly upgrade the quality of its support operation, but so far I've seen no sign that similar promises by Iomega are being kept. (See "Iomega's tech support is under a dark cloud that seems to just get darker," Sept. 23, 1996, page 54.) If a company can keep selling products, it doesn't have a lot of incentive to put money into improving its customer service. And what are we going to do about it?

Maybe there is something we can do short of bombarding state agencies with all of our gripes. You'll remember that two weeks ago I offered to put readers in touch with each other if they felt they were being unfairly subjected to collection proceedings by Citadel Computer Systems. That idea seems to be working: We've already put together a small group who might be able to help each other build their cases against Citadel's collection agency.

It seems we might be able to use a similar approach with the other companies we discuss. Each situation is different, so I don't know what such a group might decide to do. That would be up to them. It's worth thinking about, and I think it's worth continuing this discussion next week.

Ed Foster's Gripe Line examines product quality, customer service, and sales practices. Send gripes to gripe@infoworld.com or call (800) 227-8365, Ext. 710. Join his Gripe Vine forum on InfoWorld Electric *at http://www.infoworld.com.*

WORLD WIDE WEB REVIEW

JOYCE MCCLURETH

READERS REACTED STRONGLY *to two recent Test Center Comparisons — one on network operating systems and the other on Web application development tools. Other letters we received were rather favorable about our recent articles on the year-2000 problem, total cost of ownership issues, and DNS charges.*

Death Star

I CAN'T TELL you how much I enjoyed reading Bob Metcalfe's "Be There" column in *InfoWorld*. [See From the Ether, March 3, page 44.] This is a brainstorm of the good Dr. Barker that has been coming for quite a while. As an early shareholder and total believer in the system, having seen it operate in San Antonio at the shareholders' meeting, all I can say is that it's about time someone really wrote about this system without placing it in the usual modem category. Obviously, this is much more than a modem — it's a real attack on the telecom monopoly and the whole question of firewall security. Keep on writing about Data Race and Dr. Ben Barker.

Chris Considine
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NOS Comparison

IN INFOWORLD'S recent NOS Test Center Comparison, one of the cons for IntranetWare was listed as "Server console isn't as friendly as NT's or Warp Server's." [See Comparison, March 3, page 1.]

Get real. Unless your server is as flaky as dandruff, you won't be spending much time at the console anyway. Almost all administration is handled by the GUI-based NWAdmin. What need would there be to have a GUI face on the console of a NetWare server other than to suck memory and CPU cycles?

Chris Lowe
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I DON'T BELIEVE IT. When I picked up *InfoWorld* this morning, my jaw dropped. *InfoWorld* actually rated IntranetWare over Windows NT Server — significantly and with good, solid reasons.

After three years of reading how "superior" NT Server was supposed to be or was going to be or will be one day, I finally get to read what I and other WAN/LAN administrators have known for so long. I'm still in shock.

Thanks for an honest review and evaluation. I wish more of the industry would do the same instead of just picking up the press releases and reprinting them.

Ron Notarius
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Total cost of ownership

I'VE GOT ONE more opinion for the cost of ownership debate. [See IS Survival Guide, Feb. 24, page 56.] I believe the high numbers that are given to the cost of ownership of PCs. But I do see people using the numbers in misleading ways.

There is a bumper sticker that applies here: "If you think education is expensive, try ignorance." The same thing applies to PCs. For most workers, the benefits of using PCs far outweigh the costs they impose. This is the case even with an $11,000 cost of ownership.

But I think it can be informative to look at the cost-only side of the PC cost-benefit equation. It gives you an idea of what kind of costs you can save by intelligently cutting costs. Some of that cost-cutting might involve spending more money on hardware rather than less.

For instance, don't skimp on hard drive space (especially on file servers). Compare the time people spend trying to live within a too-small disk quota with the cost of buying a couple more gigabytes of storage. In many cases, spending the extra money on hardware can have a great payback in reduced "futzing" cost.

Don't condemn the cost of ownership

AFTER THREE YEARS OF READING HOW SUPERIOR NT SERVER WAS SUPPOSED TO BE ... I FINALLY GOT TO READ WHAT I AND OTHER WAN/LAN ADMINISTRATORS HAVE KNOWN FOR SO LONG. I'M STILL IN SHOCK.

Ron Notarius

numbers just because they ignore the benefit side. Just remember to use the numbers in the right way. When you look at budgets, the place to start looking for savings is in the high-cost areas. You have to be careful not to reduce the benefits of an item when you reduce its cost.

Andy Welter
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Year-2000 problem

SANDY REED'S recent editorial categorized the year-2000 problem as one of the great problems on the horizon. [See From the Editor in Chief, Feb. 10, page 55.] This issue has the potential to disrupt the economy and endanger businesses and the people who work for them.

Year-2000 problems are already affecting some businesses today and are guaranteed to cause problems for a long time to come. Many year-2000 problems have not been identified, and the resources required to remedy the situation are expensive and in short supply.

Some organizations have been planning for and working on year-2000 problems for years. Many others have no serious strategies for dealing with year-2000 issues. The popular response seems to be complacency.

Milton Birnkrant
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Web tools

THANKS FOR YOUR highly informative article on Web application development tools.

[See Comparison, Feb. 24, page 1.] Most magazines just regurgitate tool features; yours gives background on the different approaches and the basic trade-offs between them. *InfoWorld* is a great teacher because its comparative analyses go beyond simple product reviews.

Howard Fosdick

Near tears

ROBERT LEWIS' columns make me weep sometimes, just like some Dilbert cartoons. I'm going to tear out and post his article on creative programming and process control — it's a winner. [See IS Survival Guide, March 3, page 66.] I believe that we can do a lot of engineering in our development, but that is not the same as a bunch of drones just following orders.

David Wall
Kirkland, Wash.

What's in a domain name?

AS A GENERAL GRIPE, DNS charges rub me the wrong way simply because I have no choice in the matter. [See Between the Lines, Feb. 24, page 62.] I am involved with several different U.S. domains served by different higher-level DNS services, and I can't switch providers to get the best price.

Not only that, but when our higher-level DNS service was implemented, I was not contacted at all. Due to an error in [our provider's] fledgling DNS files, our network was unavailable to connect to the rest of the 'net for more than a week. I caught the problem when everybody stopped getting e-mail. If I handled my employer's network that way, I'd get chewed out. If I were a consultant and handled somebody else's network that way, I'd either not get paid or never be hired again. Yet I have no choice but to pay the yearly DNS fee to a company that has already proven that I and my networks are relatively unimportant to it. This smacks of socialism, Mr. Tebbe!

Jon L. Gardner
Bryan, Texas

Sci-fi

LETTER WRITER David Pepper describes a science-fiction story "where humans rarely faced one another in person." [See To the Editor, Feb. 24, page 48.]

That story is based on the Isaac Asimov book *The Naked Sun*, where a detective from Earth is sent to the Spacer world of Solaris (population 20,000 people, 200 million robots) to investigate a murder. In the story, people "viewed" each other but wouldn't think of being where they could "see" each other.

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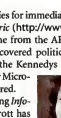
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FROM THE EDITOR IN CHIEF · SANDY REED

Fast and sure: Bob Trott's Microsoft coverage reflects our high standards

When we decided to open an *InfoWorld* news bureau in Seattle, we knew we would have to staff it with someone experienced in two key areas: writing on deadline and covering an icon. We found both in Bob Trott. As a reporter for The Associated Press, he was used to multiple daily deadlines and easily adjusted to filing stories for immediate posting on *InfoWorld Electric* (http://www.infoworld.com). Trott came from the AP's Boston bureau, where he covered politics. Anyone who could cover the Kennedys in Boston could certainly cover Microsoft in its home city, we figured.



We were right. Since joining *InfoWorld* in October 1996, Trott has become one of the premier reporters covering Microsoft. Trott's skill at reporting on deadline was showcased recently when a security flaw in Microsoft's Internet Explorer 3.0 and 3.1 Web browsers came to light. First word of the bug came in the form of e-mail from students at Worcester Polytechnic Institute to *InfoWorld Electric* News Editor Dana Gardner, directing him to their site for details.

Gardner passed the tip on to Trott, who immediately recognized the potential impact of the flaw and contacted one of the students for more information. He followed that with a call to the lead product manager, who confirmed that the problem was serious and said Microsoft was working on a security patch. Trott then wrote his article and filed it to Gardner for editing and posting on our Web site. As a result of this fast teamwork, *InfoWorld Electric* was first with a news article about the bug. As new information became available, the article was updated throughout the day.

It's worth noting that Trott reported the story fully. He contacted both the students and Microsoft for comment, a fundamental principle of good news reporting. The World Wide Web has changed how and when news is delivered, but at *InfoWorld* we apply the same high standards of reporting to the Web that we have in the print edition. Reporters like Trott prove every day that you don't have to cut journalistic corners to be first with the news.

Sandy Reed is editor in chief of InfoWorld. *Contact her at sandy_reed@infoworld.com.*

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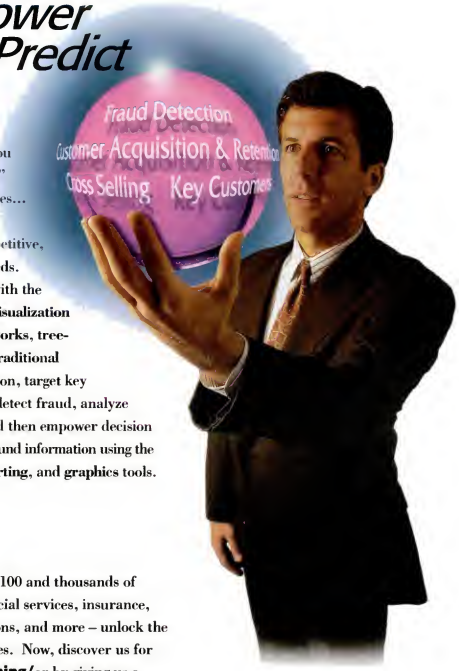
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The ins and outs of



Remote access

By Jeffrey N. Fritz

On the surface, the options for remote access are better than ever. The analog modem has been joined, or soon will be, by a new cast of remote-access services such as ISDN, 56Kbps modems, cable modems, and Asymmetrical Digital Subscriber Line (ADSL). All of these technologies are full of promise, but each is also facing its own roadblocks.

Interest in remote access to corporate networks and the Internet has never been stronger. Dataquest, a consulting agency based in San Jose, Calif., reports that 1996 earnings from remote access amounted to approximately $4 billion. Dataquest expects that figure to increase rapidly to $12.2 billion by the end of the century.

But the great demand for remote access has yet to result in services that are reliable and easily deployed. Most analysts believe that older technologies are still the best choice for the near future.

Fast remote-access options are held hostage by a lack of standards and infrastructure

"I would not have anyone hold their breath for massive ADSL or cable modem deployments. For now, managers should deploy what is available," says Vern Mackall, senior analyst for International Data Corp. (IDC), in New York. "ISDN and modem dial-up will be the access media of choice for the next several years."

DIGITAL DUO. ADSL and ISDN are both part of a last-mile transport system called DSL that can carry high-speed data over standard copper telephone lines. Both technologies are capable of delivering high-speed remote access.

Although ADSL sounds promising, questions remain as to how quickly the telephone companies will be able to roll it out in their service areas. The long delays and problems with ISDN lead many observers to believe that the carriers will fumble the ADSL ball, just as they did when attempting to deploy ISDN.

But some analysts believe that ADSL will be rolled out much sooner than expected.

"There is a misconception that ADSL will take as long as ISDN to roll out. The fact is that the investment in ADSL capability for the telephone operating companies is not as steep as it was for ISDN," says Kieran Taylor, a broadband consultant at TeleChoice, a Verona, N.J., consulting agency. "This will make ADSL deployment more ubiquitous than ISDN was in its early days."

Taylor believes that production ADSL services will roll out late this year or early next year. He points out that telephone carriers such as US West, Bell Atlantic, and GTE have strong commitments to ADSL technology. Many have already launched ADSL trials in their service areas. Still, Taylor sees regulatory

roadblocks to rapid ADSL deployment, particularly in the United States.

"The United States government needs to find a way to unbundle the local loop," Taylor says. "The supply of spare copper pairs in the telephone trunk cables is rapidly diminishing due to requirements for additional lines for modems and fax machines. The regulatory issues that prevent the telephone carriers from unbundling the remaining spare copper loops could significantly slow the deployment of ADSL."

Because it offers decent throughput and flexibility, ISDN is starting to play a major role in providing services for accessing enterprise networks and the Internet. ISDN's biggest advantages are in its improved throughput over modems and the fact that it is already deployed in many locations. However, ISDN is far from perfect, particularly when you attempt to order, configure, and install it.

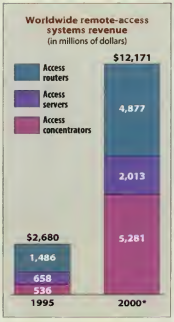
No two telephone companies seem to deal with ISDN in quite the same fashion. ISDN is even called by different names. For example, Pacific Bell calls its ISDN service FasTrak, Bell Atlantic calls it IntelliLinQ, and Ameritech uses the term ISDN Direct. There is residential ISDN, there is business ISDN, and there are Centrex-based ISDN services.

ISDN is also offered as a single-point Basic Rate Interface (BRI), multipoint BRI, and Primary Rate Interface (PRI) service. All are charged at different rates, even by the same service provider.

For network administrators charged with ordering and installing ISDN connections for telecommuters and branch offices around the country, the disparity in ISDN rates, names, and services can be very disconcerting. Even users experienced with ISDN can expect to face a rocky road if they move from one area to another.

Despite these and other challenges to ISDN deployment, the great demand for fast Internet and remote access is expected to keep the demand for ISDN steady.

Concentrators to lead remote-access boom



CABLE MODEMS. Like the telephone carriers, cable operators are interested in providing data, Internet, and voice services to their subscribers. In a sense, they have an ideal environment, because they already have high-bandwidth coaxial cables and, in some cases, fiber installed to their subscribers. However, the same infrastructure that works in their favor also works against them.

As the diagram on this page illustrates, a typical cable TV network distribution system uses a "head-end" topology in which all connections and information flow from a central point. This suits the distribution of Internet services reasonably well but does little to provide remote LAN access to corporate networks. This is a significant roadblock for cable modem deployment, according to IDC's Mackall.

"Every town has its own cable system, and they are not interconnected. This will be a significant impediment to network managers looking to connect telecommuters by cable modems," Mackall says. "The telecommuters will most likely be scattered across various communities with no cable interconnectivity. This will make enterprise connectivity over cable modems very difficult."

However, cable modem technology is emerging as a better choice for consumers than for businesses.

Cable data convergence
Cable modems will offer fast Internet access but little or no connectivity to traditional data services or non-IP corporate networks.

"Corporate networks are not, by nature, connected to cable company head-end offices," Mackall says. "Likewise, most business facilities are not wired for cable. Coax cable is simply not fed into many businesses, but telephone wiring is plentiful."

Besides infrastructure, there are additional roadblocks to the deployment of cable services for corporate network access. Like Ethernet, cable is a shared medium and subject to degradation due to users vying for the same bandwidth, noise leaking into the cable, and traffic load on the media.

The extremely low error rates that network managers have come to expect from digital technologies such as frame relay and ISDN may not be possible with cable modems.

"Quality of service is just not a hallmark of the cable service providers. Outages and just plain lousy signals are more typical than not on many cable systems," Mackall says.

The cable companies' reputations could also hinder the acceptance of cable modems.

"It is doubtful that many network managers will be willing to trust their mission-critical remote applications to a technology that has significant reliability issues," Taylor says.

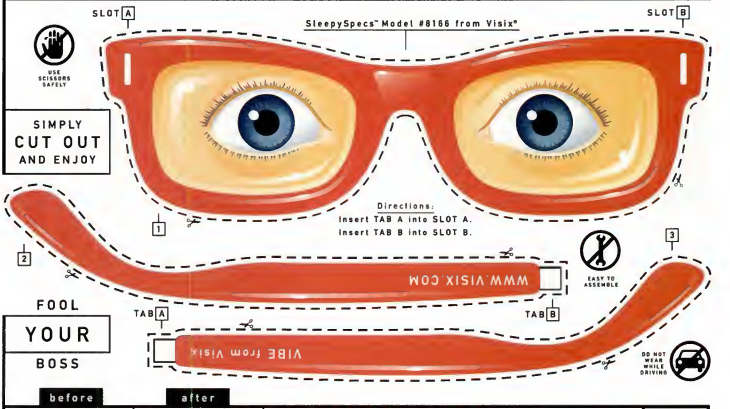
ANALOG ANSWER. Just when everyone thought that analog modems could not transmit data any faster, a new breed of modems has come along promising throughput speeds of 56Kbps, once again breaking the analog modem ceiling. A close

INFO WORLD

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MIS Director
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look, however, reveals some significant limitations to 56Kbps modem technology.

In order to perform at 56Kbps rates, these modems require a digital connection, such as ISDN, to be on the far side of the call. If there is an analog connection on the far side, the throughput drops to traditional modem speeds. So although in some cases 56Kbps modems may result in performance improvements, in many more cases they will perform exactly as the traditional 28.8Kbps or 33.6Kbps modems do today.

"The 56Kbps modem vendors have used some very robust marketing efforts that are well ahead of the technology itself," Mackall says. "The fact that there is no single 56Kbps standard confuses the marketplace. Corporate network managers are not likely to rush out and deploy a pre-standard technology."

The same holds true for many Internet service providers (ISPs). Although some ISPs have begun deploying pre-standard 56Kbps modems, most are content to wait until a standard is in place before they begin offering 56Kbps service to their subscribers. A worldwide 56Kbps modem standard is still years away. The best users can hope for is an interim standard that may be available by year's end.

Another problem facing 56Kbps modem vendors is a Federal Communications Commission ruling that limits the amount of power that can be transmitted over telephone lines.

The ruling, which has existed for a while, is intended to limit cross talk on analog lines. However, because of the way 56Kbps modems place data on the analog line, they can overwhelm this power limit. This has the potential to limit how often users can realize full throughput rates from their modems.

Despite these hurdles, some analysts believe that 56Kbps modems are a viable option.

"56Kbps technology is excellent technology. It is available and deployable today," says Brad Baldwin, director of remote access for IDC, in Mountain View, Calif.

BURNED BY SPEED. All the newer remote-access technologies have their share of promises and warts, which is expected to drive demand for analog modems and ISDN.

Companies looking to deploy today's technologies will most likely install higher speed modems and ISDN PRI access devices in the network center. Similarly, homes and remote offices will be equipped with ISDN terminal adapters, ISDN routers, or analog modems.

Taylor believes that managers should try to maintain a wide-angle view of access technologies.

"Network managers should regard the various technologies as steps in a bandwidth ladder," Taylor says.

Analog modems are the first step, followed by ISDN, ADSL, and cable modems, according to Taylor. A casual telecommuter who relies primarily on e-mail probably will do fine with an analog modem. A company president, on the other hand, may be more satisfied with ISDN's faster connections and access. Engineers may settle for ISDN today but will need ADSL in the future to get their work done more efficiently.

Most analysts caution companies from leaping into new and largely unknown technologies.

"It is better for the users and managers to get their feet wet before jumping into new remote-access technologies," Baldwin says. "No one should buy or deploy any remote-access technology without first determining applications and users needs in terms of bandwidth and connectivity. Although there is a lot of potential in these technologies, there are also significant problems. Start with modem access, then move on to ISDN. Once ADSL is mature, move to it."

Jeffrey Fritz is responsible for advanced network technology development for West Virginia University, in Morgantown, W. Va. He is the author of Remote LAN Access: A Guide for Networkers and the Rest of Us, *published by Manning Publications/ Prentice-Hall PTR, and* Sensible ISDN Data Applications, *now in its third printing, published by West Virginia University Press. He can be reached at jfritz@wvu.edu.*

REMOTE-ACCESS OPTIONS

ADSL. As its "asymmetrical" moniker implies, ADSL (Asymmetrical Digital Subscriber Line) offers different throughput rates depending on the direction that the data is flowing. ANSI standard T1.413 specifies the downstream range (network to home) from 1.544Mbps to 6.144Mbps and upstream rates (home to network) ranging from 16Kbps to 640Kbps. The reality is that the early ADSL deployments will see much more modest throughputs, typically 1.544Mbps downstream and 64Kbps upstream.

CABLE MODEMS. Like ADSL, cable modem technology is asymmetrical in nature. However, with a potential downstream throughput of 25Mbps, cable modems can support network access 800 times faster than 28.8Kbps modems and 2.5 times faster than a traditional Ethernet network. Unfortunately, most users will see only a fraction of this throughput.

Most of the competing technologies, such as ADSL, ISDN, and 56Kbps modems, use point-to-point connections. As a result, the link's bandwidth is dedicated to the remote user. However, cable modems, like traditional Ethernet, use shared media. All users on the same cable infrastructure vie for the available bandwidth. Because of this, user data can be slowed considerably by congestion and delays in the cable network.

56KBPS MODEMS. Like cable modems and ADSL, 56Kbps modems are asymmetrical, providing 56Kbps throughput downstream, but only 28.8Kbps or 33.6Kbps upstream. In addition, there is no common standard in place for 56Kbps modems. This means that one vendor's 56Kbps modem will not necessarily work with another vendor's 56Kbps modem.

ISDN. Like ADSL, ISDN is a DSL service operating over standard twisted-pair telephone cable. However, ISDN is symmetrical, offering the same bandwidth in both directions. ISDN network devices can aggregate channels to provide 384Kbps bandwidth.

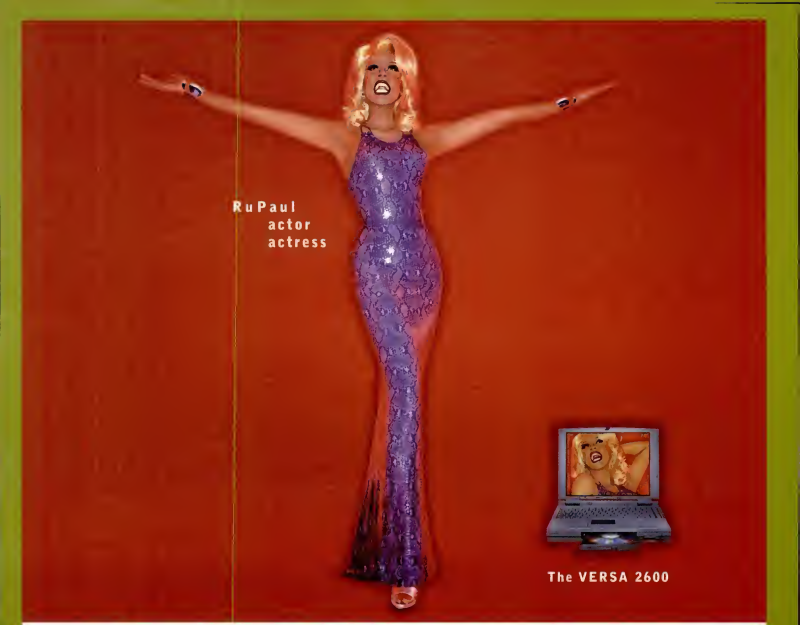
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NEC

MANAGER'S BOARD BULLETIN

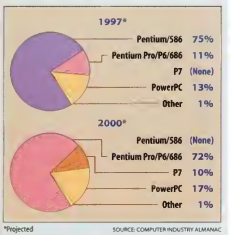
BACK ON TRACK. After getting sidetracked by the Internet, the North American computer-telephony integration (CTI) market will increase from $2.5 billion in 1996 to $3.2 billion in 1997, according to market researcher Dataquest. Dataquest's report, *Planting Some Stakes — The North American CTI Market*, found that in a rush to deploy Internet-based call centers last year, many CTI vendors failed to deliver what they promised customers. Still, Dataquest expects the CTI market to grow to $6.1 billion in 2000, as long as IT departments do not deplete their capital budgets addressing the year 2000 issue. Dataquest, in San Jose, Calif., can be reached at (800) 419-3282.

ONLINE CATALOG SCALES UP. National retail chain Service Merchandise is putting its entire sales catalog of more than 50,000 items onto the World Wide Web with the help of a database tool from NetDynamics. Not only will customers be able to make a secure transaction over the 'net, they will also be able to see if a product they want is in stock at their local Service Merchandise outlet and reserve it before going to the store to buy it. For more information, contact NetDynamics Inc., in Menlo Park, Calif., at (415) 462-7600, or visit the Service Merchandise Web site at http://www.servicemerchandise.com.

SUPERCOMM CONFAB. More than 40,000 people will convene in New Orleans this spring for Supercomm '97, which bills itself as "the world's largest annual communications exhibition and conference." Among the topics addressed in conference programs will be voice LANs, customer-care solutions, and network-services integration. Supercomm '97 is sponsored by the Telecommunications Industry Association and the United States Telephone Association. Registration for the exhibition is free before May 1. For more information, contact Supercomm '97, in Deerfield, Ill., at (800) 424-5249.

Speeding toward 2000

Shipments of faster CPUs will continue and the PowerPC will more than hold its own, according to a forecast of microprocessor distribution



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IS SURVIVAL GUIDE · BOB LEWIS

Ferreting out human error from hoaxes on the Internet takes a twist

MANAGEMENT SPEAK: *In a perfect world.* TRANSLATION: *Just get it working and get it out the door.*

— Thanks to reader Jim Boston for this week's vocabulary builder

You'll find this hard to believe, but I have an unfortunate tendency to make wisecracks. Sometimes, my jokes get out of hand, becoming the conversational goal. Function — communication — gets lost in the quest for form (and you'll recall that "form follows function" is one of the three great laws of management).

I victimized a perfectly good argument this way a few columns ago. Comparing the costs of mainframe and client/server computing, I described a small system — a few users, low transaction volume, small table size — and then asked which would cost more, a mainframe or client/server version. Instead of just making the point, I tried to be clever (I said, "Hint: The word "Cobol" shouldn't appear in your answer"), successfully inverting my meaning.

I hate it when that happens.

This was a minor gaffe. Worse was another recent column in which I Salingered *InfoWorld*'s readers. (To Salinger — verb, transitive: to state as authoritative knowledge, information gleaned from secondary sources, thereby perpetuating unfounded rumor. From Pierre Salinger, who repeated an unfounded Internet rumor as fact, trying to precipitate a major scandal.)

I had read that the license terms for Microsoft Office 97 allowed licensees to run it only on Microsoft operating systems, and, trusting the source, I used this "fact" in my column.

For the record, the license terms do not — repeat, not — include this restriction. My sources of information were wrong. I should have read the license terms myself instead of relying on secondary sources. With too little time to do so, I took a chance instead.



Usually, when people make mistakes in print, they run corrections that say, "We regret the error," and move on.

I got to thinking, though. We all have too little time to absorb too much information, make sense of it, and decide on courses of action. That means we have to take shortcuts, relying on news articles, opinion pieces summarizing news articles, and even opinion pieces summarizing other opinion pieces.



Usually, this amounts to efficiently using limited time. It can, however, lead to embarrassing mistakes.

The Internet magnifies this dilemma greatly. It's the nature of print media that you can make an informed judgment regarding the trustworthiness of what you read. It's the nature of the Internet that you can't. Any damned fool can create Web pages that look just as official and authoritative as *InfoWorld Electric*. The Internet may be the greatest source of information ever, but figuring out what constitutes information and what constitutes deception, rumor-mongering, or just plain troublemaking isn't all that easy.

Here's what's needed: Some independent authority should establish a certification program for information providers. The program would define minimum standards for news gathering and editorial practice. Sites that qualify would be allowed to display the "TIP" (Trusted Information Provider) logo. Consumers of information could then look for the TIP logo before accepting what they read.

This — the ISO 9000 of publishing — would be of awesomely high value for every information consumer on the planet. It wouldn't guarantee perfection. It would let you know whether your source is worth attending to.

No TIP certification program exists today, and in its absence you have to make your own decisions regarding how to be sure what you've read reflects reality. As stated before in this space, you need a finely tuned BS detector.

This isn't a new problem. There's a branch of philosophy — epistemology — that deals with how we know what we know. It teaches that there's no such thing as absolute certainty, just relative confidence.

Which, I guess, means we all have to gather information to the depth we think is appropriate, draw the best conclusions we can, and hope to get it right when it counts.

And always acknowledge the possibility that we got it wrong.

Bob Lewis is a consultant with Perot Systems Corp. Write to him at robert.lewis@ps.net, or join his forum on InfoWorld Electric *(http://www.infoworld.com).*

Calendar

March

24-26 *Visio Solutions Conference, Seattle.* User and developer conference for the business diagramming and technical drawing software maker. Contact Brenda Narciso, (800) 787-8113 or http://www.visio.com/conference.

April

7-10 *EMA'97, Philadelphia.* Conference covering Internet and messaging technologies. Contact Electronic Messaging Association, (703) 524-5550 or http://www.ema.org.

8-10 *WinHEC 97, San Francisco.* Conference on the future of hardware for Windows. Contact Microsoft, (800) 254-5509, msevent@carlson.com, or http://www.microsoft.com/hwdeb/winhec.htm.

8-11 *Internet Commerce Expo (ICE), Atlanta.* ICE will focus on the intranet and Internet commerce markets. Contact ICE, (800) 667-4423.

21-22 *World Reimo User Conference, Bellevue, Wash.* User conference for the database engine and tools vendor. Contact Katie Costinett, (206) 557-5224 or Kcostinett@reimo.com.



22-24 *DCI's Sales Force Automation Conference & Expo, Chicago.* Focusing on sales force automation tools and the Internet, as well as enterprise implementation strategies. Contact DCI, (508) 470-3880 or Confreg@dciexpo.com.

May

5-7 *deFacto Intranet 97, Monterey, Calif.* Conference covering sales, marketing, and customer service applications of corporate intranets. Contact Kalthoff International, fx@kalthoff.com.



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N+1 Redundant/Hot Pluggable 1050W Power Supply System	NO	
5 Year/36 Month Limited Warranty	NO	
$14,995* Manufacturer's Suggested Retail Price	**$15,494*** Est. Street Price Based on IDC pricing 1.97	

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Sun's NEO 2.0 shines on Titan Broadband Communications

■ The object-oriented app dev software empowers the broadcast company's programming distribution

By Paul Karon

TITAN BROADBAND Communications faces the difficult task of raising the IQ of television. To achieve this, Titan is betting its future on a relatively new and untested suite of CORBA-compliant, object-oriented application-development tools from Sun Microsystems, in Mountain View, Calif.

The San Diego–based Titan isn't trying to make smarter TV shows but instead is concerned with the business of broadcasting and distributing television programming.

CASE STUDY

Titan's new and most critical specialty is the control and administration of this programming distribution over wireless mediums; its customers are the companies that conduct this distribution and that need a way to control and protect the television signals they send out over the airwaves, while at the same time providing 24-hour-per-day service to their viewers. Titan's products are targeted at both the pay-television industry, as well as corporations that use private television networks.

It all boils down to this, "our customers want to be able to control their signals, and they want be able to get paid for it," says Mike McKnerney, engineering director at Titan.

Titan is using Sun's NEO 2.0 object-oriented application-development software to create its newest product family, the Digital Video PassPort, a subscriber-authorization system for the wireless television-broadcasting industry. It's a multifaceted business, involving broadcast technologies such as "head-end in the sky" satellite-to-cable broadcasting and wireless line-of-sight broadcasting.

Titan is betting that the CORBA specification will provide a stable product-development base for the coming years — a critical factor for the television-distribution industry, a business that has seen vast change in the last decade and is likely to experience even greater transformation in the next.

I WANT MY VIDEO TV. One of the great challenges for multichannel television-distribution companies is to meet consumer demands for increasingly flexible purchasing options, McKnerney explains. These options may involve different subscription services with varying combinations of basic and premium channels or the one-time-only viewing services of pay-per-view programming.

But offering these various purchasing options can be a complex operational and administrative task: the greater the number of subscription options, the more complex the billing procedures. And, pay-per-view programming requires that the television-distribution company be flexible enough to send out the specially ordered programming with little or no advance warning from the customer, such as in the broadcast of major sporting events.

McKenney says that Titan's business goal is to provide a subscriber-authorization system flexible enough to keep up with the fast-changing television-distribution marketplace and robust enough to handle large numbers of service delivery options, such as pay-TV requests, immediately, all day, every day. Also, any system Titan sells has to be scalable, portable, and interoperable, from very small to very large environments. All these factors point toward an open-systems solution, Titan officials say.

Wireless television is currently more of an international phenomenon. In the United States, the cable-television infrastructure is highly developed with an entrenched infrastructure of wires. Companies are invested in existing proprietary cable-industry solutions to control program delivery and billing matters. But the cable system infrastructure legacy is far less pronounced overseas.

"With Digital Video PassPort, our interest is in the countries that are just now starting out, and the open-systems argument is very strong in those areas," says Mareena L'Anra, director of marketing and communications for Titan. "They don't want to be captive to proprietary technologies."



GOOD DEVELOPMENT *plans don't fall from the sky; in the case of Titan Broadband Communications, Mike McKnerney received his inspiration from Sun's CORBA-based development language.*

GOING AFTER ORBS. Titan is not new to the television-broadcast business; in fact, the company developed and co-owns important patents for signal-encryption technology that have been used in set-top boxes and other parts of the cable-television business.

Once Titan's engineers decided to stick with object-oriented design and the CORBA specification, however, they still had to decide which implementation to use. Sun was not the only choice.

"There were definitely more mature ORBs [object request brokers] out there, and we looked at them," says Stephen Ritter, one of the software engineers responsible for Titan's Digital Video PassPort product line.

Yet the announcement and implementation of the new generation CORBA 2.0 standards specifications made the decision less of a risk.

"We felt that since CORBA 2.0 just happened recently, all the players would be on an even field because they all still had to react to the new CORBA spec," Ritter says.

A descendent of Sun's non-CORBA product DOE [for Distributed Objects Everywhere], NEO 2.0 is Sun's first CORBA product.

"[Sun's] NEO is primarily interesting for its implementations of the CORBA specs," Ritter says.

According to Ritter, important functionality in NEO 2.0 includes its well-implemented naming service; the capability to conduct debugging processes across networked objects; and its built-in memory-leak checking, which deletes unnecessary memory variables and thus is particularly useful in systems that must run 24 hours per day, seven days per week, such as Titan's Digital Video PassPort.

> *"We felt since CORBA was an official standard, it was here to stay ... we wanted to migrate the ORB segment lower ... into the operating system to become part of the kernel."*
>
> *— Stephen Ritter*
> *Titan Broadband Communications*

Sun's role as an operating-system company gave it an important edge, Ritter explains.

"We felt since CORBA was an official standard, it was here to stay, and so we wanted to migrate the ORB segment lower and lower into the operating system to become part of the kernel," Ritter says. "Since Sun makes its operating system, that's its goal as well, and so we think the integration is going to be a lot cleaner."

WHAT ENCRYPTION HAS TO DO WITH IT. One of the key features of the Titan's Digital Video PassPort solution is its encryption technology. Unlike the data that flows out to consumers through hard-wired cable TV systems, wireless-television signals bounce through the atmosphere like ordinary radio waves, thus, they are vulnerable to interception by unauthorized recipients or electronic pirates.

Encryption of the signal ensures that unapproved viewers won't get anything but static. The same technology makes certain that customers receive only agreed-upon and paid-for channels.

A significant part of Titan's customer base are private businesses that want to use their own TV systems to distribute corporate data; for them, encryption is of utmost importance as well. For Titan, NEO's scalability and interoperability are strategic imperatives.

Operators of a private television network, such as those owned by corporations, may be able to safely predict the rate of growth and absolute size of their system, but commercial broadcasters generally hope for the greatest possible subscriber growth.

Because there are no certain ways to guarantee how quickly and successfully a commercial television-broadcast company will attract customers, the scalability of NEO's development tools becomes an important issue for Titan.

"As a customer, you've got to see a migration path — how to add capacity without losing anything in your original technology investment," McKnerney says. "Just as important, people want to be able to manage their businesses in all different ways."

It is Titan's open-systems approach that enables it to cater to all these customers, McKnerney says.

Paul Karon is a free-lance writer based in West Hollywood, Calif.

At a glance

Problem: Create a subscriber authorization system for the wireless television broadcasting industry.

Solution: Sun's NEO 2.0 object-oriented application-development software that utilizes the CORBA specification.

Benefit: A scalable, interoperable, stable product-development base that provides a subscriber-authorization system flexible enough to keep up with the fast-changing television-distribution marketplace and robust enough to handle large numbers of service-delivery options.

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BETWEEN THE LINES · MARK TEBBE

Novell's road ahead is long and winding but not a dead end

NEXT WEEK, NOVELL will use its BrainShare '97 conference, in Salt Lake City, to speak to its most important customers: corporate developers and administrators. Novell executives will have to convince these customers — many of whom are closely studying Windows NT — that it is on track and will be a long-term player. This is why you need to be aware of this conference.

The press says Novell seems to be swerving out of control. That view is partially correct. It is in an extended state of flux, waiting to see who will be the next CEO. Given all that has happened with Novell, finding the right CEO is no small challenge. Board members have experienced the downside of hiring a corporate baby-sitter rather than a leader. They do not want to make the same mistake twice.



But Novell is definitely not out of control. Although it has lost some market share and related revenue, it has yet to crash and burn. Today, Novell is the fourth largest software company on this planet. Fourth. It is sitting on more than $1.1 billion in cash (which is up $78 million in the last quarter) and has no debt. It is enjoying strong gross margins (about 80 percent) and is profitable with 14 percent post-tax net margins.

According to International Data Corp. research, on the server front, NetWare and IntranetWare server shipments totaled 973,000 for 1996, outshipping NT by 25 percent. More astoundingly, about 70 percent of corporate network users are hooked up to Novell's servers. Additionally, several of Novell's products are industry leaders and award winners. Not bad for a company that some think has one foot in the grave.

Nevertheless, Novell should not focus on these accolades exclusively. It has lost some corporate mind share and industry momentum. This is one of the reasons Novell has had a troublesome time landing the new CEO.

While looking for this new CEO, Joe Marengi and his team have allowed a very serious flaw to develop: They have lost their sense of urgency. Under Ray Noorda, Novell's management was always talking to customers and checking the rear-view mirror for threats. Today, they are doing neither. Knowing that Marengi will not be the new leader, Novell's management waits until the board identifies a new leader. Some shareholders have identified this terrible board-level error and are calling for immediate action.

At BrainShare, Novell needs to prove to its customers that it is focused on the critical demands of corporate networking. It must become aggressive again and clearly communicate that it wants to lead in this important area. It needs to leverage Novell Directory Services, its often-underestimated secret weapon. Novell executives have shown how quickly they could integrate Lightweight Directory Access Protocol into this corporate storage chest. Now they need to continue adding related services to expand the power of their customers' networks.

And they must go much further. They need to swallow any pride and quickly support other OSes, namely Windows NT and the key versions of Unix. True, with this aggressive strategy Novell could lose the client to Microsoft, but it might retain the server.

With or without a new CEO, Novell needs to use next week's conference to convince its existing customers that they are with a winner, one that is willing to make the bold moves to stay ahead.

Let's hope Novell's executives do it. Or have you already written Novell off and plan to move forward with Microsoft? Send me some e-mail with your comments.

Mark Tebbe is the founder of Lante Corp., a leading consulting and integration company. He can be reached at mtebbe@lante.com.

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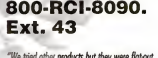
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9. How much RAM do you want installed?

10. What type of hard drives do you want installed?
(A) SCSI (B) IDE (C) Other

11. What capacity hard drives do you want installed?

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▸ Windows NT Server clustering software

Wolfpack load a bit off balance

Continued from page 1

will be ready for deployment as a production solution in corporate IS departments.

Two not quite a pack

Wolfpack initially will support only two-node server clusters, which is a far cry from existing multinode Unix-based clustering products. But Microsoft plans to begin certifying larger node configurations sometime next year.

BETA

A typical Wolfpack configuration consists of two certified, off-the-shelf servers using a common SCSI bus to attach to shared, physical cluster resources, such as a disk array. Each server is connected to the network in the usual fashion, however, Microsoft recommends using an optional, private network for cluster maintenance traffic. (See diagram, right.)

Ideally, a server-clustering solution should allow end-users to access server resources and network applications as a single logical unit.

Also, the load-balancing component should automatically distribute the network demand over the available clustered server resources. Wolfpack may not satisfy corporate expectations and requirements in either of these areas.

Although the process could have been more graceful, I was able to bring up network shares (any shared disk volume) as a cluster resource.

Also, I could gain client access to those shares through a common, logical, cluster network server name, instead of through the actual physical server name.

After I induced a fail-over of my primary server, my clients were able to continue accessing the network share resource without my having to change the server name. However, I was unable to see my cluster as an available server from the Network Neighborhood in Windows 95 or NT. (Microsoft plans to fix this for the shipping product.)

Also, the share resource is available from only one of the clustered servers at a time. Wolfpack does nothing to balance the load of client requests for the files on the share through both cluster servers.

To effectively balance loads using Wolfpack, you can create two shares, each pointing to the same logical data set. Assign each share to one of the two clustered servers that is acting as the primary host for that share. You can then set the policy for each share to fail-over to the other server. Finally, you need to manually distribute the load by balancing user access across both shares.

This paradigm holds true for client/server network applications, such as database, Web, or messaging servers. To provide load-balancing capability, third-party developers will have to tailor their applications using the Wolfpack Software Development Kit, which was distributed as a beta version last November. They'll have to add integration to provide graceful fail-over operation to ensure, for example, that live data won't be lost.

Wolfpack will be able to provide some load-sharing relief, though. For example, administrators can distribute two applications that currently reside on a single server, running one application on each server. This method offers no performance gains over just distributing the applications on two standalone servers.

However, by running the two applications on separate servers, Wolfpack will provide fail-over protection if one of the clustered servers goes down. In the event of a downed server, the fail-over operation will result in the two applications running on the one server.

Administering the cluster

Using Wolfpack's GUI-based Cluster Administrator tool, I easily added resources and resource groups to my cluster. The tool does, however, suffer from a few beta-related bugs. Wolfpack will ship with approximately a dozen default resource types, such as physical disks, file shares, and generic applications. You also will be able to add new resource types through third-party development.

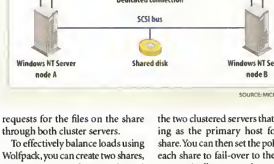
Resource groups can contain several resources that can be related to each other. I easily added new resource items and set dependencies for those items. Dependencies allow administrators to determine

▸ WOLFPACK *page 95*

Wolfpack clients address server or cluster

Initially, Wolfpack will support only two servers in a cluster. The servers can share resources such as a disk array on a common SCSI bus. Clients can access some cluster resources such as application services as if they were on a single logical server.

Typical configuration



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THE BOTTOM LINE

Wolfpack helps, beta

Wolfpack should minimize the network downtime associated with equipment failure and scheduled maintenance. However, the product's load-balancing features won't meet expectations without custom application support.

Pros: Adequate fail-over/fail-back capabilities; easy resource and policy administration; Software Development Kit available for third-party development.

Cons: Available only in two-node configurations; lacks intelligent load balancing for applications; beta software quite buggy.

Microsoft Corp., *Redmond, Wash.; (800) 426-9400, (206) 882-8080; fax: (206) 936-7329; http://www.microsoft.com.*
Price: *Not announced.*
Platform: *Windows NT Server 4.0 .*
Ship date: *This summer.*

▸ Web-browser suite

IE 4.0 hints at browser, GUI future

By Dylan Tweney

MICROSOFT Internet Explorer 4.0 is loaded with features that promise to make the World Wide Web more interactive, easier to navigate, and more tightly integrated with the Windows desktop. It may also represent the largest public user interface experiment in history.

More than a mere Web browser (although it delivers significant enhancements to the basic browser, mail, and news programs), Internet Explorer (IE) 4.0 also includes optional integration into the Windows 95 shell that significantly alters the way the desktop, Taskbar, and Windows Explorer behave.

These alterations may well reveal the next wave in personal computer GUIs — a field that has seen no major innovations since the Apple Lisa was released in 1983.

BETA

But, like the Lisa, the IE 4.0 Windows interface will need some improvements before it gains widespread acceptance. I tested an early "platform preview release" of IE 4.0. A later version of the product will be made publicly available on Microsoft's Web site this month.

Web pages can be placed directly on your desktop and updated automatically on a schedule that you set.



Internet Explorer's shell integration divides the Taskbar into segments that can be rearranged, including, for example, a scrolling news ticker.

Object-oriented HTML

The browser appears similar to IE 3.0, although IE 4.0 contains important enhancements to its usability and HTML capabilities. Topping the list of modifications is support for Dynamic HTML.

This simplifies the process of adding interactive features to Web pages through scripting, and it allows Web-page designers to manipulate and modify HTML objects right on the page.

You can use Dynamic HTML to animate text or graphic objects, add interactive features, or position text and graphics exactly where you want them to appear.

Dynamic HTML is not yet an accepted standard, although the World Wide Web Consortium is currently considering a draft of the standard. For now, IE 4.0 is the only browser to support Dynamic HTML.

▸ INTERNET EXPLORER *page 95*

THIS WEEK

REVIEWS
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HOW WE REVIEW

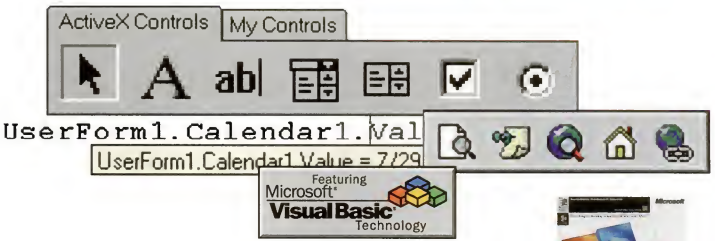
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Wolfpack

Continued from page 93

the relevant load order of resources during fail-over. For example, by setting dependencies, I could ensure that a cluster IP address was switched to the new server prior to loading Internet Information Server (IIS) virtual-root resources.

I also was able to set fail-back policies, which allow Wolfpack to return a resource to its primary server when it comes back up. In addition, by selecting the Move Group option, I could switch the primary server operation of a resource group on the fly.

In my tests, however, Wolfpack didn't do a very good job of failing over IP-address resources. And unfortunately, Cluster Administrator doesn't offer any troubleshooting insight as to why a resource may have failed to load. The product definitely needs more troubleshooting capabilities before it ships.

There's something else to consider when deploying Wolfpack. Application-server software that doesn't support the Universal Naming Convention for identifying network-bound directories (such as IIS) will require identical drive mappings on each server to ensure a successful fail-over operation.

It's still too early to tell whether the first release of Wolfpack will be stable enough for you to run your business on it. The beta version, though, proves that the product will offer advantages over running NT alone.

In the short term, administrators will benefit from Wolfpack's fail-over capabilities, reducing network downtime due to failed hardware and software or scheduled maintenance. However, you won't have intelligent application load-balancing unless a third-party developer adds that support for your application.

Jeff Symoens (jeff_symoens@infoworld.com) is a senior analyst at the InfoWorld Test Center.

Internet Explorer

Continued from page 93

Usability enhancements

IE 4.0's familiar face also includes many thoughtful improvements to its basic usability. For instance, IE 4.0's AutoComplete feature fills in frequently used URLs as you type them into the address bar.

A handy search pane lets you submit search requests to major search sites such as InfoSeek, Alta Vista, and others. Your search results appear on the left while you use the right-hand pane to browse the sites you've found.

IE 4.0 also includes features designed to help you minimize the time you spend online by automatically checking sites for changes or by downloading content at scheduled times for later browsing offline.

Communication accessories

Microsoft has also updated other members of the Internet Explorer suite. The POP3 and newsgroup clients and Microsoft Mail and News have been improved and integrated into a single application, dubbed Outlook Express, which is now compatible with Lightweight Directory Access Protocol directories and IMAP4 mail servers. A new version of NetMeeting 2.0 provides videoconferencing on top of its existing collaborative features.

Microsoft has a scaled-down version of FrontPage, the WYSIWYG HTML editing utility, called FrontPad. It's a useful and complete tool for basic Web-page editing.

Interface issues

IE's integration into the Windows 95 shell is the most dramatic — and risky — feature. Accordingly, Microsoft has made this an optional part of IE 4.0. Even if you choose to install IE 4.0's shell integration, you have the option to switch it off later.

Probably the most conspicuous change is IE 4.0's Active Desktop, which lets you place Web pages, stock tickers, and other Web elements directly on your desktop. These pages have no controls other than scroll bars (where needed) and two small handles for moving and resizing the pane.

I found that such pages, although conveniently accessible, tended to get obscured behind the many desktop icons on my 15-inch screen.

Also, the process of placing or removing a site on my desktop was awkward.

IE 4.0 adds multiple, customizable toolbars to the Windows 95 Taskbar. And, IE 4.0 enhances Windows Explorer with a Web View and browser-like Forward and Back controls.

With the Web View, you can open folders and files with a single click, just like Web links. And, you can create custom HTML pages for any folder, which IE 4.0 will display along with (or instead of) the usual list of files.

Overall, these modifications dramatically change the way you interact with Windows.

IE 4.0 makes networked and local files look more alike than they ever have before. Although Microsoft is incorporating fixes for IE 3.0's security flaws into IE 4.0 prior to its release, this still doesn't address the underlying question of whether it's a good idea to blur the distinction between the desktop and the network.

If the interface previewed in IE 4.0 is to become widely accepted, Microsoft will need to listen closely to feedback from its beta program about this and other interface issues.

For now, users of Windows 95 and Windows NT can sample Microsoft's most recent vision of the interface of the future.

And even if it turns out to be a failed interface experiment, IE 4.0 still represents an outstanding Web browser and communications suite that is well worth downloading.

Dylan Tweney (dylan@infoworld.com) is a senior reviews editor at the InfoWorld Test Center.

THE BOTTOM LINE

Microsoft Internet Explorer 4.0, beta

This suite combines an outstanding Web browser with powerful tools for mail and news access, Web-page authoring, and collaboration. With its optional integration into the Windows interface, Internet Explorer 4.0 may also hint at the next wave of user-interface design.

Pros: Usability enhancements; support for Dynamic HTML; improved mail and news client features; FrontPad for Web-page authoring; capability of putting HTML into Windows folders and on desktop.

Cons: Shell integration; difficulty distinguishing between network and local files; awkward process for adding pages to desktop; current lack of sites that implement Dynamic HTML.

Microsoft Corp., *Redmond, Wash.; (800) 426-9400, (206) 882-8080; fax: (206) 936-7329; http://www.microsoft.com/ie.*

Price: *Free.*

Platforms: *Windows 95, Windows NT 4.0; Windows 3.1 and Macintosh versions to follow.*

Ship date: *This summer; platform preview release will be available by the end of this month.*



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▸Data-gathering and analysis software

Raosoft tool serves up easy surveying, simple statistics

But new users may find SurveyWin difficult

Alan J. Fridlund

IF YOU'RE LOOKING for an easy way to gather and analyze data, Raosoft's SurveyWin 3.2 might meet your needs. With this product, users can quickly build survey questionnaires and perform basic analyses of the collected data. It also has an HTML capability for conducting surveys on the World Wide Web.

However, SurveyWin currently lacks some of the more advanced features of its DOS counterpart. Registered users will be able to enable additional DOS functions for free as they become available. So if you need more than basic survey analyses, you'll want to look at a more sophisticated package.

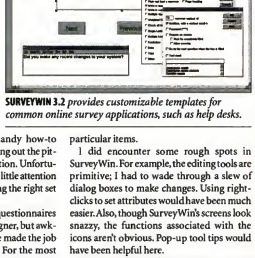
Conducting surveys is just as much art as science. Even though a survey question may be logical and grammatical, it won't necessarily yield informative results. The SurveyWin documentation has a handy how-to guide to survey research, pointing out the pitfalls in questionnaire construction. Unfortunately, the documentation gives little attention to the equal problem of selecting the right set of respondents.

I was able to create detailed questionnaires using the graphical forms designer, but awkward spots in the user interface made the job more difficult than necessary. For the most part, adding a question to a survey was a point-and-click operation. I picked the type of question (for example, text input, multiple choice, or weighted choice) I wanted from a pop-up list box and then typed in the text for each item. I could drag the questions anywhere on my page, set the answer options as radio buttons of graphical objects, and edit formats such as color and typeface. I could also get immediate feedback for correct answers and branching based on responses to online help was incomplete (such as the section on how to assemble and upload questionnaire scripts for the Internet), and I had to consult the Raosoft Web site for assistance.

There are some extra-cost options available for SurveyWin, which I wasn't able to review. For example, the $595 Ufill program lets you post questionnaires and obtain data over a network, on bulletin boards, at kiosks, or via floppy disk while maintaining confidentiality of the data.

SurveyWin can certainly get the data gathering and analysis job done, especially for experienced users. But the product is not as easy to learn and use as it should be for new users.

Alan J. Fridlund is a psychology professor at the University of California at Santa Barbara. He has worked extensively with statistical software since 1976.



SURVEYWIN 3.2 *provides customizable templates for common online survey applications, such as help desks.*

particular items.

I did encounter some rough spots in SurveyWin. For example, the editing tools are primitive; I had to wade through a slew of dialog boxes to make changes. Using right-clicks to set attributes would have been much easier. Also, though SurveyWin's screens look snazzy, the functions associated with the icons aren't obvious. Pop-up tool tips would have been helpful here.

The convenience of an integrated product such as SurveyWin is that, as you design the questionnaire, the program immediately constructs a database to hold the response data. This gave me an immediate description and analysis of my survey data. I could obtain descriptive statistics such as means, percentages, and standard deviations as well as procedures such as analysis of variance and cross-tabulations. I could then create line, bar, and pie charts from that data.

Although SurveyWin's analysis and graphing capabilities are good for summaries, they're inadequate for drilling down into complex data.

The manuals were disappointing, though well-written. The bulk of them concentrates on the DOS version (included in the box with the Windows product), which differs in some capabilities from and uses different menus than the Windows software.

If you need help while learning and using SurveyWin, your options are the online help and a small user's guide, which duplicates part of the online help but overlooks several topics. On a couple occasions, the SurveyWin

THE BOTTOM LINE

SurveyWin 3.2

GET This product eases the job of designing questionnaires and reporting survey responses. However, SurveyWin isn't the product for those who need more advanced survey analysis.

Pros: Graphical forms designer; e-mail and HTML questionnaire capability.

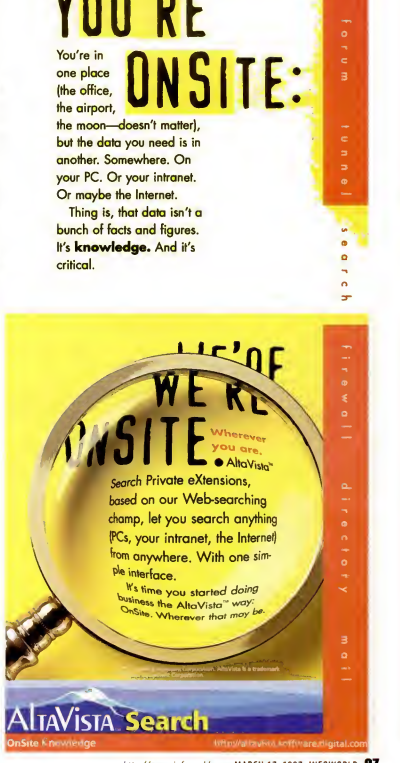
Cons: Not as easy to learn and use as it could be; provides only basic analyses; some functions in DOS version omitted; confusing editing tools; incomplete information in online help.

SKIP

Raosoft Inc., *Seattle; (206) 525-4025; fax: (206) 525-4947; raosoft@raosoft.com; http://www.raosoft.com.*

Price: *$495; per-node network pricing available.*

Platforms: *Windows 3.1, Windows 95, Windows NT 3.51 and later; DOS and OS/2 versions also available.*





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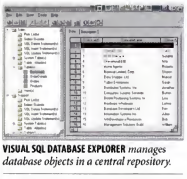
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▸ Client/server development tool

Visual SQL links with ODBC, generates C++

By Maggie Biggs

IF YOU DEVELOP client/server applications using C++, you know that often the most difficult part of your project is the database integration. Blue Sky's Visual SQL 4.2 will give you access to any ODBC-compliant database with a toolset that is integrated with the Microsoft Visual C++ development environment. The integration combined with a centralized database repository and provided SQL tools make Visual SQL a handy tool that you should consider adding to your development toolbox.



VISUAL SQL DATABASE EXPLORER *manages database objects in a central repository.*

With the required load of Microsoft's Visual C++ and my database of choice, Sybase's SQL Anywhere, I began installing Visual SQL. I did get a couple of error messages, but the process completed successfully. I then used the configuration tester included with Visual SQL. Everything seemed to check out OK.

Database management

Visual SQL has a Database Explorer graphical interface that is really helpful in inspecting and managing the interaction with your databases. With the Explorer, you can create and open database connections and view your database objects: tables, views, queries, and pick lists. You can access any ODBC database from this interface. The organization and presentation of data content and attributes within Explorer are well-thought-out and easy to work with.

In addition, the Explorer provides seamless access to some of the other Visual SQL tools: Query Builder, SQL Editor, Pick List Editor, and SQL Wizards.

With these tools and prompts, it was easy to define a query against the database, define a SQL SELECT statement, or define a look-up table. You can also view any selected database object or its properties from this interface. Even if you are not a database expert, you will find the Explorer interface a breeze to learn.

Development integration

With an understanding of the toolset Visual SQL provides for database management, I was curious how this would link to Visual C++. After accessing the development environment, I tried to launch some of the Visual SQL components from the toolbar — nothing happened. Then I noticed that the tool tips seemed to display garbage data instead of the appropriate text. Both of these items seemed like minor complaints, but Blue Sky should fix them.

Using the menu options in Visual C++, I accessed the Visual SQL AppWizard by creating a new project. The prompts that were provided enabled me to select key application attributes, then Visual SQL summarized my selections and generated an application framework that I could use as-is or modify. This wizard could save a lot of coding time for developers.

Visual SQL also adds other development time-savers into the Microsoft Developer Studio Component Gallery. There is a DataScreen Wizard to assist you in formatting the display of single database records as well as a Datasheet Wizard for displaying multiple records.

The Fill Datasheet and Fill Pick List components aid in getting data from queries, tables, and pick lists into your data sheet, list box, or combination box. Finally, the SQL statement function creates code for running SQL statements.

All of the Visual SQL tools and wizards rely on the class library that Blue Sky provides. The Visual SQL Class Library for ODBC extends the Microsoft Foundation Classes library with provisions for more advanced data handling. Some of the functionality provided includes data-sheet support, database connections, and data links to combination boxes, list boxes, and pick lists. There are also provisions for data formatting, transfer, and validation.

Implementation aids

In addition, Visual SQL supplies some tools to help you manage and troubleshoot application issues. The Application Browser provides an easy mechanism to examine the database objects in your application. There is also a Data Source Tester to verify connectivity to your ODBC data source as well as a Graphics Locator and integration with Crystal Reports.

Aside from the errors on install and the nonworking Visual SQL toolbar within the Visual C++ environment, this product worked flawlessly. It's easy to use and provides good tutorials to get you started. The biggest gain will be the time you save coding. Visual SQL is worth evaluating and considering as an addition to your development toolset.

Maggie Biggs is a technology analyst at the InfoWorld Test Center. Her Internet address is maggie_biggs@infoworld.com.

THE BOTTOM LINE

Visual SQL 4.2

BUY / COLD

This client/server tool extends the Microsoft Visual C++ development environment while also providing tools for better incorporation of databases into your application. The wizards and additions to the Microsoft Foundation Classes (MFC) library will save you development time and effort.

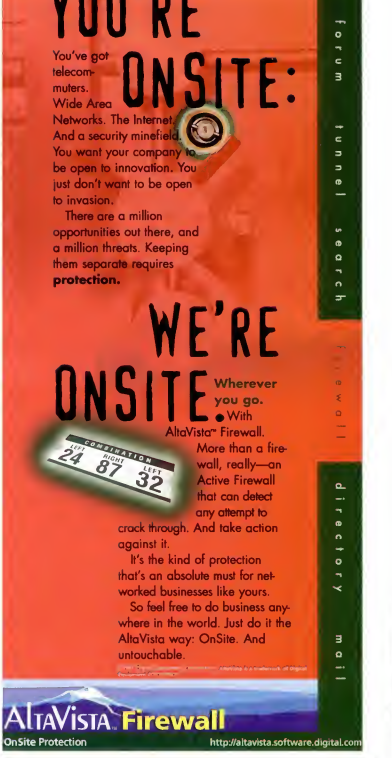
Pros: Integrated support for ODBC-compliant databases; centralized access to all database objects and links to SQL tools and Visual C++; good toolset for adding database support to C++ projects; MFC extended with class library's increased list-box, pick-list, data-sheet, and combination-box options; additional expression and function building tools provided.

Cons: Visual SQL integration into Visual C++ toolbar not working properly; tool tips on toolbar showed garbage instead of text; some error messages during install.

Blue Sky Software Corp., *La Jolla, Calif.; (800) 457-4946, (619) 459-6365; fax: (619) 459-6366; info@blue-sky.com; http://www.blue-sky.com.*

Price: *$499*

Platforms: *Windows 95, Windows NT 3.51 or later.*



DOWN TO THE WIRE · NICHOLAS PETRELEY

Microsoft's NetPC is many things, but don't confuse it with a network computer

Let's start with pencils. What are the attributes that have made the pencil so successful? Simply put, it's easy to use and it's cheap. The problem is, the personal computer is no pencil. It's not easy to use, it's not easy to program … it is extremely expensive. It's time for a new device — the network computer, or NC. Think of it as an electronic pencil.

— Excerpts from a speech by Larry Ellison at the Commonwealth Club of California, March 1996

In the beginning there was the pencil. Then, at last, the PC was born — and so, too, the need for a software platform to release its full potential. Enter Microsoft Windows. The Windows operating system transformed the PC into the ultimate network-computing device.

— Excerpts from a full-page Microsoft ad in The Wall Street Journal, *March 1997*

MICROSOFT IS INFAMOUS for reinventing technology and presenting it as innovation. So I suppose it shouldn't be surprising that Microsoft has stooped to co-opting speeches, as well. But, please. "The Windows operating system transformed the PC into the ultimate network-computing device!" Is this the same Windows that barely understood NetWare until Windows 95? The same Windows — with its ActiveX and Internet Explorer — that has such sloppy security that it couldn't protect your computer from harsh language?



The ad, which accompanied Microsoft's announcement of its NetPC, goes on to credit Microsoft with the innovation of multimedia and mobile computing. I can forgive *The Wall Street Journal* for ignorance on technical issues. But if, like *InfoWorld*, the paper has a policy to pull ads that it knows are false or misleading, the *Journal* should have remembered enough PC history to kill this one.

Dazed and confused

By using the phrase "ultimate network-computing device," Microsoft is attempting to co-opt the definition of the Network Computer rather than build one.

Let's clear up some confusion right now. Here are some of the features the Zero Administration NetPC will include: automatic pre-boot configuration; nightly maintenance; automatic upgrades, scans, and policy enforcement; remote problem resolution; security restrictions; diagnostics for monitoring and predicting failures; a remote wake utility, Web-based management, messaging-based management, and developer kits. Here are the administration features built into the Network Computer: a network connector. You tell me which one is the "zero-administration," ultimate network-computing device.

The fact is, Microsoft can morph the PC, but you will always need to manage those clients at the desktops and server. In a centralized network-computing environment, the server never has to know anything about the clients. It spits out standard protocols and standard, platform-independent applications, and you can connect any client that understands them.

From a management standpoint, this makes network computing the ideal migration strategy. You can install a bona fide Java-based NC right next to a 286 or Pentium Pro. As long as the PC is running TCP/IP, HTTP, and Java, the server won't have a clue which is which. In contrast, plop a 486 running Windows 3.1 next to a NetPC and see what the dozen or so Zero Administration management features on your server think about that.

The problem with the NetPC is that Microsoft can't respond to the threat of the Network Computer by reproducing the competition's technology. A NetPC can serve as an NC, but the Windows portion adds a proprietary management burden and security risk without adding any value to the network-computing model. To truly compete on the NC's turf, Microsoft literally has to remove what we now know as Windows from whatever comparable client it "invents."

The tables have finally turned. As long as Microsoft owned the desktop, no other company could compete on a level playing field. Consequently, Microsoft created products and strategies to crush competition, not to serve the customer. The customer has always been secondary. Witness the fact that it only owned up to the expense of managing Windows PCs when the NC threatened to kick the PC's butt.

In the coming era of network computing, however, vendors can only compete on a level playing field. Quality, features, and price will be the differentiating factors among products that will otherwise be completely interchangeable. If they're not, they'll lose.

I'm not saying Microsoft has never delivered anything of quality, but until now, it has never really had to. Unfortunately, judging by the NetPC, Microsoft isn't about to change. Instead, Microsoft is simply going to confuse the issue with marketing. Larry "Edison" invented the light bulb and launched a new era, leaving Microsoft stuck with a warehouse full of candle wax. Rather than work on a better light, Microsoft is shaping its wax like a bulb and hoping you don't notice that nothing happens when you flip the switch.

Enlighten me with your views. Send me e-mail at nicholas_petreley@infoworld.com, and visit my forum on InfoWorld Electric *at http://www.infoworld.com.*

NOTES FROM THE FIELD BY ROBERT X. CRINGELY

Readers are still infected with Microsoft madness and conspiracy fever

PAMMY IS NOTHING if not generous. Her most recent act of sharing: She passed the virus-from-hell flu on to me. I'm not the most patient patient, I'll admit, but after a week of reporting from my sickbed, I'm convinced that the entire IS world has come down with the creeping crud. What else could explain the kvetching and the conspiracy theories circling the industry?

Kinko behavior

Let's start with the one that won't die — this Kinko's Office 97 DLL story. Readers moaned about wanting the URL (which makes me wonder how they got into this particular line of work if they can't figure out how to use a search engine). Then, after I practically sent the DLL to every one of the complainers via e-mail, the theories started coming in.

One guy downloads a couple of hacked DLLs to unlock the Office 97 time key. None will pass his virus scanner. All have some sort of TPE virus. His conclusion: "It's a plot … but I don't think it's Microsoft's."

Let me get this straight. Nefarious hackers want to infect the systems of dishonest computer users unwilling to pay full fare for a copy of Office 97. Right.

But the best rumors flying around the newsgroups are those from the conspiracy theorists. Why is it, I was challenged, that Microsoft is sending two or three cookies each time you move around its site? Frankly, I thought to myself, two or three cookies is a pretty modest number compared to many commercial Web sites. But no, this is a plot by Microsoft to secretly access your computer, the theory goes. With a cookie?

The ultimate story comes from a guy whose fever has to be at least two points higher than my 102-degree reading. The security hole in Internet Explorer is old news by now, but this fellow seems to believe that this so-called bug is really part of Microsoft's plan to rule the world. The idea is that Microsoft licenses apps with the condition that they be run only on its OS and on the original machine. Now, the "bug" could really be Microsoft's way of checking up on licensing agreements, checking the operating system, and enabling the company to delete any applications running illegally. Yeah, I'm sure that's it.



People need to discriminate. The fact that the MSN network data server was unavailable to users in the Raleigh, N.C., area for several days last week, that's a problem. The story that MSNBC dumped its NT server in favor of a more reliable Unix server — that's juicy. So are rumors of Mecklermedia's plans to launch an initial public offering via the Allen Group.

Push comes to shove

It seems like only weeks ago that I was in a hotel in San Francisco being hectored by rumored acquisition candidate PointCast about this new thing called push technology. Now everyone and his dog, including Microsoft last week, said they were launching a pushy service. Even Novell is getting in on the act, with rumors that it may build push features into its directory — with NDS, they know where you are, so why not deliver your paper, too? I can hardly wait.

MAYBE I'M JUST in a bad mood. Having to print "clarifications" does that to me. HP is insistent that the JetDirect Download Manager "will not allow an Ethernet firmware image to be downloaded to a Token Ring JetDirect Card" or vice versa. The official word claims the JetDirect software associates the appropriate firmware image to the proper part number for the JetDirect Print Server. HP tested it; it works.

Send me something real. Call me at (415) 312-0555; fax: (415) 286-2775; or send e-mail to cringe@infoworld.com.